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With Which Is Combined

PAPER

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St. Lawrence River Power Development Planned

Construction of Huge Project Put Forward By Beauharnois Light, Heat & Power Co., to be Started In Near Future, Following Approval of Canadian Federal Government—Possibility of Eventually Developing 500,000 H.P.—New Industries to be Established —Frank P. Jones and R. O. Sweezey Associated in Undertaking

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., April 22, 1929.—Following approval by the Federal Government of the huge power development scheme put forward by the Beauharnois Light, Heat and Power Company, active work is now going on for financing the project and starting construction at an early date. The company has an office in the Drummond Building, Montreal, with R. O. Sweezey in charge as managing director. The president, Frank P. Jones, is now in England in the interest of the company.

The site of the company's operations is between Lake St. Francis and Lake St. Louis, a short distance west of Montreal, on the St. Lawrence River. There is a fall of over 80 feet between these two lakes, which are really enlargements of the river, and while the power to be developed is put at 35,000 h.p., it is considered possible to raise the level of Lake St. Francis and develop 500,000 h.p. The canal between the two lakes, which will have to be of the same depth as the new Welland Canal in order to accommodate ocean ships when, and if, the whole St. Lawrence waterway above Montreal is deepened, will be half a mile wide.

The financing of a $65,000,000 project of this nature will in itself be a large undertaking, much the largest yet attempted in Canada. It will be handled in relation to actual requirements of construction, for reasons of economy. It is understood the Bank of Montreal group are lending more than moral support and patronage to the Beauharnois enterprise. The fact that E. R. Wood is associated with Frank P. Jones and R. O. Sweezey, may be taken to suggest the Canadian Bank of Commerce may also be cooperating and will have a part in the financing of the Beauharnois securities this year, and later.

The present acting board of directors will be replaced by the permanent board, the personnel of which will be announced concurrent with the prospectus setting forth the issue of securities later in the year. It is anticipated the new board will be representative of the two banking groups referred to and will include prominent French as well as English Canadians.

It is planned that preliminary construction work will be in progress by July 1 this year. Work on the main canal will be started early in 1930. Dredges of the "sand sucker" type will be used. The construction of the main powerhouse and remedial work to control the flow and ensure a steady flow of water within the speed of 2.25 feet per second, specified in section five of the order-in-council, will not be completed until the summer of 1932. By November of that year it is planned to have four units of 50,000 h.p. in operation.

By arrangement with the Quebec Government, a substantial block of the power to be developed will be available to the Ontario Hydro-Electric Commission, and new industries will be established to take care of the remainder, negotiations having been arranged on that basis as a preliminary to application for a charter to proceed with the work.

News Print Outlook Brighter

A noticeable enlargement in the market for news print, together with the recent price stabilization, has brought about a brighter outlook in the news print industry and a reflection of this has been seen on the stock market, leading news print securities having advanced in spite of general decline in other issues.

Coincident with this has come a renewal of the rumors of impending merger, and prominent security houses do not hesitate to say that mergers on a large scale are in the offing, such companies as Abitibi, Canada Power and Paper, the St. Lawrence Paper Mills, and the Wayagamack Company being mentioned.

Mersey Co. to Start Operations this Year

That actual production of news print will be started late this year by the Mersey Paper Company seems to be pretty well assured. Construction of the mill on the Mersey River in Nova Scotia is proceeding on schedule.

About half of the structural steel has been erected and over 300 men are at work on the plant. By the middle of the summer it is anticipated that the total payroll of the mill will approximate 800 men. This is, of course, in addition to the 1,200 men employed in connection with the power development under the direction of the Nova Scotia Power Commission.

Steel work has been completed for the office buildings, practically all of which are now bricked in. The shipping room, cooler, machine room, boiler room, sulphite storage and stock sheds have been practically completed. Construction of the main wharf at Coalspur at the mouth of the cove is more than half completed. The main wharf is to be 900 feet long and the coalspur 460 feet. All of the foundation work at the plant has been done and tracks, about two miles in all, have been laid.

The Tidal Power Bill

The Private Bills Committee of the Dominion House of Commons has by a vote of 22 to 10 defeated the bill for granting an extension of time for two years to the Dexter P. Cooper Company for the commencement of its power project in Passamoquoddy Bay, between New Brunswick and Maine. The proposal was to harness the tidal waters of Passamoquoddy Bay, producing a 600,000 h.p. development. The estimated cost of the scheme was $100,000,000.

Celanese Company Expands

At the annual meeting of shareholders of Canadian Celanese, Ltd., Camille Dreyfus, president, reported that the company had

(*Continued on page 96*)

Paper Mill Activities In Fox River Valley

Building to House Paper Box Plant to be Erected Shortly at Menasha, Wis.—Normal Operating Schedules of Wisconsin Paper Mills Being Resumed, Following Improved Weather Conditions—U. S. Forest Products Laboratory's Program For Ensuing Year

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., April 22, 1929.—Several promotions are announced by the Victory Bag and Paper Company division of the Marinette and Menominee Paper Company, Marinette, Wis., by W. W. Hinnenthal, vice president and manager. The Victory plant is a subsidiary of the Continental Paper and Bag Corporation.

Floyd O. Avery, who has been factory superintendent for the last ten years, has been transferred to one of the new mills of the Continental corporation in the south. His place will be filled by John Dory, formerly assistant superintendent. John St. Laurent, who has had charge of the automatic department, will be assistant superintendent. General supervision of both the bag company and the M. & M. Paper Company will be entrusted to Paul J. Sievert.

New Box Factory Planned

Fluor Brothers Construction Company, of Oshkosh, Wis., has been awarded the contract for erection of a large addition to the plant of the Banta Publishing Company, Menasha, Wis. The building will be 90 by 150 feet in size, and will house a box factory, machine shop and storage. The company also is building a new sidetrack to its plant.

Production Nearly Back to Normal

Operating schedules are practically back to normal in Wisconsin paper mills after partial or complete shutdowns in several places because of high water in the power streams. The state has been virtually free from rain storms for about a week, and with all sluiceways and control gates wide open, the level has been reduced to a point more nearly normal. Some of the mills feared serious trouble because water conditions were the worst this spring of any season for many years. Steam plants have been in used in a number of mills in order to have uniform power.

Rebuilding Fox River Dam

Equipment is being conveyed by government boats to DePere, Wis., where construction crews will finish rebuilding of the large dam located on the Fox River at that point. The sluiceways were completed last year and the remainder will be entirely spillways. All construction will be of concrete.

Forest Products Laboratory Projects

Three major projects affecting the paper industry will be included in the year's research program of the United States Forest Products Laboratory, Madison, Wis., according to C. P. Winslow, director. This announcement followed the opening at Madison of a two weeks' conference of government officials from Washington, D. C., and eleven states. These projects are the finding of new woods for paper making, developing more efficient use of sulphite liquor, and to prevent stream pollution. Each year the laboratory expected that the plans for this year will evolve many more.

News of the Industry

P. M. Allen has made his final accounting as receiver of the Peshtigo Paper Company, Peshtigo, Wis., and the accounting has been accepted by the court. It was found that $40,000 in additional assets were shown by the report and these have been turned over to the Badger Paper Mills, the company which bought the mills.

Improvement is reported in the condition of W. L. Davis, president of the Dells Pulp and Paper Company, Eau Claire, Wis. Mr. Davis was in a critical condition for a time at St. Petersburg, Fla., where he submitted to an emergency operation for appendicitis. He has more than a fighting chance now, the attending physician says.

F. J. Sensenbrenner, of Neenah, Wis., president of the Kimberly-Clark Corporation, has been elected as a director of the newly organized Wisconsin Chamber of Commerce. He will be one of the representatives of the Fox River Valley section on the state board.

Mr. Sensenbrenner also is assisting in a movement to establish a state park on Lake Winnebago. He has sponsored the introduction of a bill in the Wisconsin legislature authorizing purchase of a large scenic tract for public use, and within reach of a large number of paper mill workers.

Proceed Against Grays Harbor Pulp Co.

PORTLAND, Ore., April 18, 1929.—The Grays Harbor county game commission early in April ordered Game Warden Jack Winslow of the Grays Harbor district in the state of Washington, to start proceedings against the Grays Harbor Pulp company to stop pollution of Grays Harbor and tributary streams. It was pointed out that fish taken 40 miles from the sea and 27 miles above the pulp mill at Hoquiam show unmistakable signs of the deleterious effects of acid pollution of the streams. Many of the fish are blind, it is stated, their eyes having an opaque coating similar to cataract; the fins of many of them are eaten away; many are without scales and the natural coating of slime has been removed so that the live fish can be held in the bare hand without slipping. Included in the complaint is the assertion that the fish are discolored.

Repeated efforts have been made, says the commission, to secure the elimination of this menace to fish life, as plans have succeeded in other pulp mill districts where proper methods have been applied and they ask the same protection at Grays Harbor.

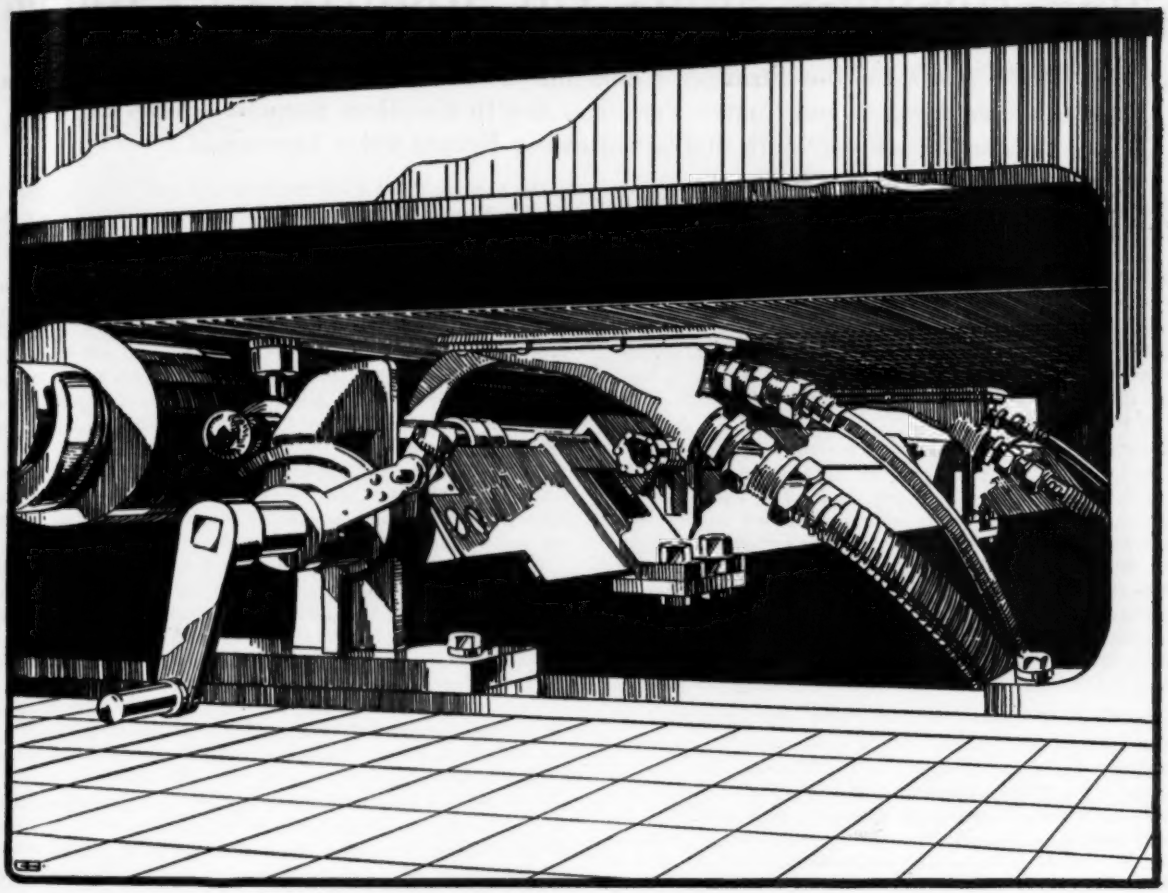
The commission has had laboratory tests made recently by two specialists showing positive proof, it is stated, that the waters are poisonous, and furthermore when low water prevails the danger is increased because of the greater concentration of the acid, the commission complains.

News Print Production for March

Production of news print in Canada during March 1929 amounted to 218,147 and shipments to 219,739 tons, according to the News Print Service Bureau. Production in the United States was 114,586 tons and shipments 120,003 tons, making a total United States and Canadian news print production of 332,733 tons and shipments of 339,742 tons. During March, 19,985 tons of news print were made in Newfoundland and 1,709 tons in Mexico, so that the total North American production for the month amounted to 354,427 tons.

The Canadian mills produced 46,712 tons more in the first three months of 1929 than in the first three months of 1928, which was an increase of 8 per cent. The United States output was 11,457 tons, or 3 per cent less than for the first three months of 1928. Production in Newfoundland was 4,855 tons, or 9 per cent more in the first three months of 1929 than in 1928 and in Mexico 959 tons more, making a total increase of 41,069 tons, or 4 per cent over the same period in 1928.

During March the Canadian mills operated at 83.8 per cent of rated capacity, United States mills at 78.6 per cent and Newfoundland mills at 97.5 per cent. Stock of news print paper at Canadian mills totalled 24,045 tons at the end of March and at United States mills 30,534 tons, making a combined total of 54,579 tons, which was equivalent to 3.5 days' average production.



The Vickery Felt Conditioner

is now considered an economic necessity by almost every paper maker. It has definitely demonstrated its ability to increase production, improve quality and save felts.

If you are one who hasn't yet used the Vickery Felt Conditioner, you can try it at our expense.

Will you do this?

BIRD MACHINE COMPANY

South Walpole Massachusetts

2827

Paper Business Slows Up Slightly In Chicago

Ground Wood Papers Exhibit Stronger Undertone Than of Late — Higher Grades of Fine Papers, Bonds, Ledgers and Coated Varieties, Are In Excellent Request—News Print Market Becoming More Stable Following Recent Price Agreement

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., April 22, 1929.—April goes well into its second half, with Chicago paper dealers finding business slightly slowed up due to various causes, but with chances seemingly bright for the market as a whole, at least for the first and second quarters of the year. Ground wood papers are slightly stronger, according to reports, with bonds and ledgers, coated grades and the higher grade of fine papers in good demand, proving to be, at this time, the bright spot in the Chicago market. Hand-to-mouth buying keeps the mills and mill representatives only fairly busy, according to reports.

News print continues to arrive at a stable condition following the settlement of the price question. Production is reported at 80 to 85 per cent and the outlook good. The board market is still troubled with a price discrepancy, according to local representatives, but demand runs good. Tissues are slowly recovering from their temporary let down following the big Easter season and by the termination of the second quarter this market expects to show a very good record. The same situation exists in the wrapping paper market, where an unusually heavy spring demand slightly receded following Easter, and is now going ahead in excellent shape. Activity in waste papers is fair.

W. H. Monsson Discusses Paper Developments

The appearance of William H. Monsson, associate chemist of the Forest Products Laboratory at the Monday noon, April 15 meeting of the Chicago Division of the Salesmen's Association of the Paper Industry attracted an unusually large attendance and the discussion on "Recent Developments in the Paper Industry" given by Mr. Monsson proved decidedly interesting and worth while. Touching upon his experience in experimenting with various grades of paper; materials from which paper is made; sources from which paper can be made, together with a discussion of the new corn stalk paper industry, Mr. Monsson gave those in attendance an excellent insight on the possibilities of the paper industry from all angles.

H. R. Knott, chairman of the division, took the opportunity to announce that the next feature program, which would bring a well known figure in the paper industry to talk to the salesmen, would be held early in May, although the regular salesmen's dinners will continue as heretofore. Mr. Knott also announced the appointment of Tom Donahue of the Warren Manufacturing Company, to the chairmanship of the golf committee. Tom already has the first tournament lined up for the Glencoe Country Club on May 23. Regular monthly tournaments will be held on each fourth Thursday thereafter throughout June, July, August and September. Mr. Knott also announced the appointment of Jack Burrus of the Albemarle Paper Company as chairman of the Membership Committee.

News of the Trade

D. W. Dietrich, of the D. W. Dietrich Paper Company, Chicago, has recently announced an unusual service to the customers of that company which will provide dependable coated papers in any size, either standard or special in white or India tint only twenty-four hours after receipt of the order covering specifications. The coated paper is known as Velvafold Enamel, coming in 60, 70, 80 and 100 pounds weights. The service provided in this Velvafold Enamel is proving a feature with Dietrich customers, according to the Chicago paper man, the speed and correctness of the service being made possible without loss of paper, insuring no extra charge for cutting waste.

The Cornell Wood Products Company, well known factors in the board trade, has moved its offices from the State-Lake Building, Chicago, to the Bell Building, 307 N. Michigan avenue, Chicago, Ill.

Frank Haggerty, who for some time has represented the Combined Locks Paper Company of Combined Locks, Wis., as Chicago sales manager, has announced that he is retiring from active duty with that organization, owing to ill health and will devote his time to some new lines of work. Mr. Haggerty's position has been taken over by P. M. Allen, who for some time acted as receiver for the Peshtigo Paper Company, according to reports circulating in Chicago paper trade channels.

The Chicago Paper Company recently sent out to the trade a folder, "The Mailing Card," showing some excellent samples of Bristols and providing a number of constructive ideas on how to use mailing cards to get the best results.

"Skyros," an unusual single cover stock, sold by the J. W. Butler Paper Company, has made an impressive appearance in the Chicago printing and advertising market in the form of a folder, "1,000 ways to vary your advertising," which advertises and illustrates a specimen of this cover stock which is proving a good seller with the J. W. Butler Paper Company.

A new catalog and net price list, effective April 1, has been sent out by the Blunden-Lyon Company, paper merchants, located at 323 West Polk street, Chicago. The catalog covers all lines and items of printing papers carried by that company.

The Illinois Paper Company went on the air Monday, April 15, over radio station WJJD, Chicago, appearing from 7 to 8 P. M., with a program given by popular entertainers and making possible the advertising of the "Arlac" line of stencil and mimeograph supplies, etc., carried by the Illinois Paper Company.

Westvaco Inspirations for Printers Number 44, published by the West Virginia Pulp and Paper Company, discusses the rising tide of modernism in American advertising showing the use of color, of modern drawing, etc., in reproductions of actual advertisements.

Civic League Bond

Dobler & Mudge, Baltimore, Md., after working for more than two years to develop certain characteristics in a paper to sell at a moderate price have brought out Civic League Bond. On a sample of this new paper concern says:

"In the very feel of it, Civic League Bond is symbolic of integrity and responsibility. You sense at once that here is a splendid achievement in paper making; a dependable sheet that has been painstakingly developed to meet the most exacting requirements of modern business. Examine this sample for finish and texture, since its fine quality will repay your closest scrutiny. The high percentage of stout, clean rags used in making Civic League Bond accounts for its unusual strength and beauty. Its honest surface is a suitable background for the most important letters. One thing is certain, you can send Civic League Bond wherever you please and feel sure of its being well received."

Harry Eliason Goes to Detroit

[FROM OUR REGULAR CORRESPONDENT]

DETROIT, Mich., April 22, 1929.—The Detroit Sulphite Pulp and Paper Company of this city announces that Harry Eliason has become associated with the firm as director of production, beginning his duties April 16.

DOWNINGTON
KILBERRY PATENT SUCTION ROLL

Downingtown Introduced

Practically all Improvements

THE SUCTION roll would not be the highly efficient and the trouble-free unit that it is today, were it not for the many important changes and improvements introduced by Downingtown in the Kilberry Patent Suction Roll. The instant acceptance of our developments is proof that they were urgently needed.

Literature and a copy of our favorable Suction Roll Decision from the U. S. Court of Appeals sent on request,—no obligation. *Downingtown Mfg. Co., Downingtown, Pa.*

16—P.T.J.—4-25

Demand For Paper Satisfactory In Boston

Box Board Situation Reported to be Gradually Improving, With Less Price Cutting Experienced —All Lines of Old Paper, Bagging and Domestic Rags Continue Fairly Active—Twine Begins to Slacken Slightly, Due to Lighter Request

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., April 22, 1929.—Purveyors of paper in the Boston market as a whole say that the demand is generally satisfactory, with prices at the same levels. Manufacturers speak encouragingly in regard to the outlook.

The box board situation seems to be improving, with quotations becoming firmer. There is less price-cutting, a factor which many hope will continue. It seems reasonably safe to say that the minimum range for chip board is $35 to $37.50 and that for filled news board, $37.50 to $40.

The market for old paper, bagging and rags is fairly active in all lines. There is little change in values. Twine is softening a bit, on account of slack demand.

Paper Merchants to Meet

Prospects are that the next meeting of the New England Paper Merchants' Association will be "a regular humdinger." A letter signed by H. B. North, president of the New Haven Paper Merchants' Association, to be mailed tomorrow, says:

"The New Haven Paper Merchants' Association cordially invites you to join the crowd and attend the meetings, dinner and field day of the New England Paper Merchants' Association, May 7 and 8 at New Haven.

"Plans are being perfected for a busy and enjoyable evening with meetings, a dinner with interesting and profitable speakers and entertainment on May 7 at the Hotel Taft. Reservations for rooms at the Taft we will be glad to attend to for you, if you will just let us know your requirements.

"The next day, May 8, may be spent at one of the finest Golf Clubs in our neck of the woods—having two eighteen hole courses and a nineteenth hole at the end of each. Tennis may be had for those who desire and other amusements if you will express a preference."

Bird & Son's Report

Bird & Son, Inc., of Walpole, in its report for the year ended December 31, 1928, shows net earnings after 7 per cent preferred dividends, of $4.05 per share on the 400,000 no-par common shares outstanding, against $6.23 per share in the previous year.

President Philip R. Allen, in the annual report says: "While our sales and profits for 1928 were somewhat lower than 1927 with the very competitive situation which existed in roofings and box board, we feel that the record of earnings is very creditable. Capacity for over production in asphalt shingles and roll roofings industry brought about a drastic price reduction below cost of manufacture. The 'price war' is still on. The special paper division has continued to show satisfactory volume and earnings."

News of the Trade

A sales meeting of Carter Rice & Co. Corporation is to be held April 27. A part of the program will include a discussion of the concentration of selling and advertising efforts each month on one of the major lines handled by the company. H. R. Baldwin, manager of sales and assistant secretary of the Hammermill Paper Company, and E. A. Frampton, advertising manager of the same company, will address the meeting. In connection with emphasizing their major lines, Carter Rice & Co. are also using space in the printing publications and direct mail advertising.

Carter Rice & Co. are distributing to the trade through personal presentation by their salesmen their new demonstration book of Wayside Text.

Knight, Allen & Clark, Inc., have taken over Silvertone Envelopes, a nationally advertised, high grade line, including catalogue and clasp envelopes. They will carry a complete stock in Boston. This line is made by the Standard Envelope Manufacturing Company, Cleveland, Ohio.

A party of paper consumers visited several Holyoke paper mills, April 18, in a personally conducted tour of Rutter & McNaught, Inc.

W. W. Binford, manager of the twine department of the Andrews Paper Company, sailed April 20 for Norfolk, Va., and will have a week's rest at Virginia Beach.

D. L. Tankard, of the Port Huron Sulphite and Paper Company, Port Huron, Mich., and William L. Daniels, of the L. L. Brown Paper Company, Adams, Mass., called on the trade last week.

March was the largest month in the history of more than 125 years of the Tileston & Hollingsworth Company. Arthur V. Howland, vice president and general manager of that company, recently gave a talk on the T. & H. Calendar at the Graphic Arts Club, Cleveland, Ohio. While in that city he was guest of the Cleveland Paper Company at a dinner at the Cleveland Athletic Club, where a talk was given on Papers of Old-Fashioned Quality. The company has announced Crinoline Plate, laid, as the newest of the Papers of Old-Fashioned Quality. The April number of "How" is printed on Crinoline Text Laid and bound with Crinoline Cover.

Pink Number 20 Canson Ingres 19x24¼—33 lb. all rag hand made deckle edge is used for the Number 3 issue of "Paperettes," issued by Percy D. Wells. A new line handled by Mr. Wells is Silverleaf Bond.

Frank H. Merrill, president of the Andrews Paper Company, and member of the kraft committee of the National Paper Trade Association, left Saturday to attend a meeting of the executive committee of the National Paper Trade Association, to be held tomorrow at the Hotel Lamber, Chicago.

McSherry to Discuss Paper Ruling

HOLYOKE, Mass., April 22, 1929.—The Connecticut Valley Division of the Pulp and Paper Mills Superintendents' Association will hold their monthly meeting at the Hotel Nonotuck, Holyoke, Mass., on Saturday, May 4. This meeting will be devoted to educational and instructive discussions which are always the dominant feature of the meetings held by this division. In addition to the many papers which will be read and discussed there will be one by Francis McSherry of the Smith Tablet Company on the subject of "Paper Ruling," a subject which is of real import to all paper manufacturers.

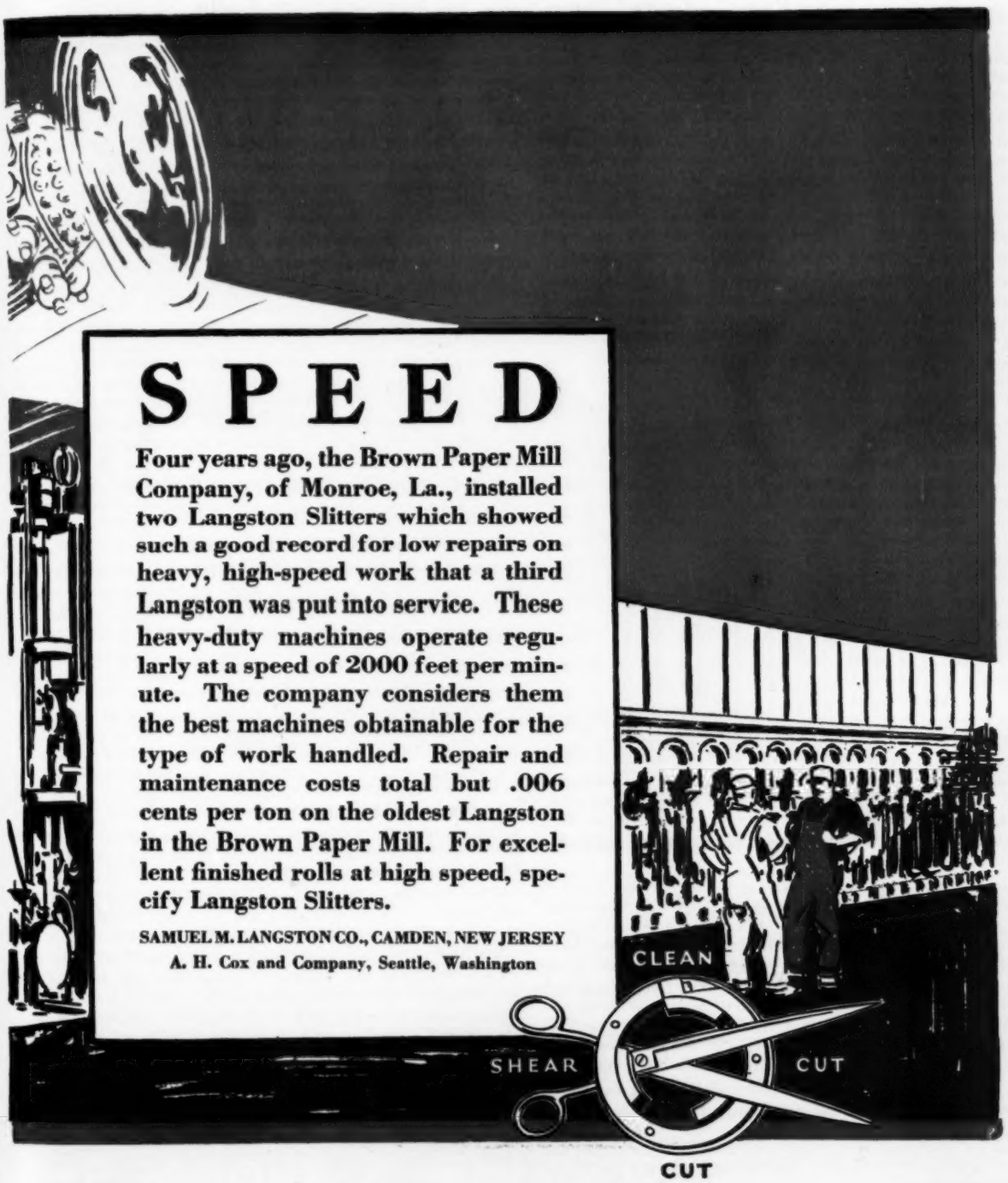
The Connecticut Valley Club of Printing House Craftsmen, and the Supercraftsman Club will also co-operate in making the sessions of this meeting of real value and interest. Those who may plan to attend this meeting should promptly advise John J. White, general chairman, whose address is Room 26, Lincoln Building, Holyoke, Mass.

Bag Factory Nearing Completion

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., April 19, 1929.—Three carloads of machinery were received April 10 for the bag factory at St. Helens, Ore., which is to be operated by the St. Helens Pulp and Paper Company. According to F. W. Mackey, manager of the bag factory, it is expected to have it in full operation by the last of April, as other shipments of machinery are enroute. The plant will employ between 75 and 100 operatives.

S T O N



SPEED

Four years ago, the Brown Paper Mill Company, of Monroe, La., installed two Langston Slitters which showed such a good record for low repairs on heavy, high-speed work that a third Langston was put into service. These heavy-duty machines operate regularly at a speed of 2000 feet per minute. The company considers them the best machines obtainable for the type of work handled. Repair and maintenance costs total but .006 cents per ton on the oldest Langston in the Brown Paper Mill. For excellent finished rolls at high speed, specify Langston Slitters.

SAMUEL M. LANGSTON CO., CAMDEN, NEW JERSEY
A. H. Cox and Company, Seattle, Washington

T E R S

Ontario Paper Mills Operating In Good Volume

Various Standard Grades of Fine Papers Are In Excellent Request—Book Paper Manufacturers Are Busier Than For Some Time Past—Insistent Call Experienced For Writing, Bond and Ledger Papers—Coated Paper Sales Are Increasing Gradually

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., April 22, 1929.—The wholesale paper trade throughout Ontario is, generally speaking, in a prosperous condition although sales volume is lacking as compared with the first two months of the year. April opened up rather quiet but a gradual improvement is being shown as the Spring advances and it is expected that the volume of sales will be more than made up by the time the usual dull summer period sets in. That will be when the commercial world begins to think more of holiday trips than of business. Meanwhile business generally throughout the Dominion is good and it is being reflected in the pulp and paper industry to a satisfactory degree. At the same time paper distributors have to be satisfied with a more or less small order class of business for none of the paper consuming industries are buying more than enough for immediate requirements. Jobbers, of course, are buying liberally from the mills, but they are compelled to pass it out to their customers in comparatively small lots. The total of these, however, constitutes a nice volume of business and there is little complaint from the wholesale paper trade.

The manufacturing end of the paper industry is active in practically every department, although somewhat draggy conditions exist in the paper converting section where orders for immediate delivery are considerably less than those booked for the future months. This applies pretty much to stationery lines, although there is a satisfactory volume of business passing in the envelope manufacturing department. Blank books and general office supplies are on the quiet side. Fine papers, for the most part, are in good demand and mills, especially on book paper lines, have orders on their books that will take them well into the summer. Orders for current delivery are also of satisfactory volume. Book paper manufacturing mills were quiet for a while earlier in the month and at the end of March but orders have increased materially since then and now manufacturing operations are back on their old scale. The call for writing, bond and ledger papers is insistent enough to provide good business in these lines and the volume of coated paper sales is gradually increasing. Greaseproof, waxing and glassine lines are moving well and it looks like a remarkably good season ahead for all light weight papers. Manufacturers of tissues, toilets and specialties have been busy since the opening of the year and under the impetus of a lot of effective direct mail and other advertising they have been able to increase their sales materially.

There has been some improvement in the coarse paper market but the volume of business just now is not as large as was looked for at this season of the year. There is some disposition to purchase in larger quantities by consumers and distributors and there are other indications that the coarse paper section of the paper industry is in for better things. Board mills are quite busy and the bringing into production of a couple of new mills during the past few months does not seem to have affected this branch of the paper industry to any great extent. The product is being absorbed largely by the paper box making trade which is quite active.

The demand for rag and paper stock still keeps up, for which the sustained activity of book and board mills is, naturally, responsible. The weather has interfered somewhat with collections of stock and with no reserve stocks on hand the situation is none too well balanced. There is no immediate probability of dealers seeking outside supplies.

Court Dismisses Pulpwood Action

"A terrible injustice would be wrought if one side only were to be heard in the fixing of tolls," observed Mr. Justice Wright at Osgoode Hall, Toronto, hearing a motion for a mandamus to compel Judge McKay of the District of Thunder Bay to hear the application of the Kyno River Improvement Company, Ltd., to fix tolls for pulpwood coming down the McIntyre River. On the grounds that the company had not complied with the provisions of the lakes and rivers improvement act with respect to advertising their schedule of proposed tolls, Judge McKay refused to hear the application. The applicant company owns certain improvement works on the McIntyre River, a tributary of Lake Superior, and tolls to be charged on pulpwood using the river are fixed by a judge of the district from year to year. Before a hearing to fix tolls is held the applicant is required to advertise in newspapers circulating in the district for a period of four weeks prior to March 1. "I have some doubt as to the correctness of the decision of the district judge," said the court in dismissing the action, adding that if these people have the right to use the river without paying for it they could at least pay their own costs. As things stand today the improvements on the McIntyre River built by the Kyno River Improvement Company, Ltd., must operate this year without tolls. Settlers in the district selling pulpwood will benefit to the extent of about 27 cents a cord sent down the river and apparently there is no recourse open to the company but to wait till next year and make sure their advertising notices are inserted in time to comply with the technicalities of the Act.

Another Pulp Mill Mooted for B. C.

According to word received in Toronto, in addition to the project planned for a pulp mill inside of New Westminster city limits, it is altogether likely that English capital will become interested in another pulp concern east of the Fraser River bridge. British Columbia lumbermen are now in England outlining the possibilities of Fraser River lumber being adaptable for such a concern and a reply from London is expected within the next month. Immense stands of timber which contain fir and cedar, suitable for cutting, and at the same time a low grade of these species and of spruce and hemlock, are still available in the Dominion Railway belt. It is in connection with the second and third rate grades that the visit to England is being made. Up to now this secondary timber has been shipped to Washington state ports to be turned into pulpwood, a distinct loss to Canada. A special permit has to be obtained for the export of such lumber to the United States. In view of the probable action of the United States Congress in placing a tariff against manufactured lumber and shingles, it is expected that the export of British Columbia second and third grade logs will cease. The American mills on the Olympic peninsula will be required to rely on their own raw materials, something they have been anticipating but not actually figuring upon. Still another phase in the argument for Canada to stand on its merits in regard to lumber is the success of a New Westminster concern in the manufacture of cedar and fir ties from second grade material. This mill, located across the river, has been operating in two shifts with much success and is now trying to catch up with orders sent in during the cold snap which tied up the Fraser River for three weeks.

Timber a Crop, Not a Mine

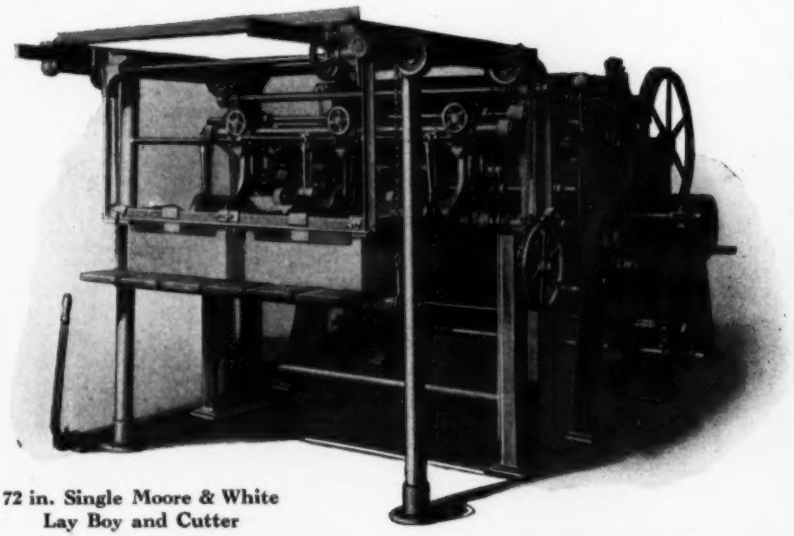
"We are trying to educate public opinion to support the Ontario Government in its policy of conservation of the forests," said the Hon. William Finlayson, Ontario Minister of Lands and Forests, in a public address in Toronto a few days ago, in the course of an appeal for the interest of the public and their intelli-

"M & W" Lay Boys

Over 1000 "M & W" Lay Boys for laying all kinds of paper, are in operation in connection with all makes of Cutters in finishing rooms or on end of paper machines. By the use of a Lay Boy the cutting expense is reduced considerably as these machines will increase the output of any Cutter.

One operator can handle any number of piles and in some cases one operator runs two or more Cutters, as their operation is automatically controlled.

The space required for the Lay Boy is no more than for the table formerly used in connection with Cutters. Wax and Glazed and Curly Papers successfully handled. Lay Boys can be had for Single, Duplex or Diagonal Cutters.



72 in. Single Moore & White Lay Boy and Cutter

. . . ADVANTAGES

Increased Production—Operates Automatically—Paper Piled Straighter—Saves Labor and Finished Paper—Can be attached to any make of Cutter—Present Trucks can be utilized.

Makes the use of Wide Cutters desirable at High Speed operation—A Trial will convince you—Trial orders accepted—Literature upon request.

THE MOORE & WHITE CO., NORTH PHILA. STATION PHILADELPHIA, PA

PAPER · MACHINE · BUILDERS

gent consideration of the acts before the legislature relative to the matter. Mr. Finlayson pointed out the mistaken policy of the past which had regarded the forests as mines rather than as crops, something to be used up, instead of an effort being made as is now being done to balance consumption with production, thus conserving this great wealth of the province for all time.

Notes and Jottings of the Trade

Officials of Hinde & Dauch, Toronto, manufacturers of fiber shipping boxes and corrugated paper products, state that business this spring is entirely satisfactory and that substantial orders are on hand. Extensions to the Montreal plant are practically completed at a cost of about $400,000, and the five-story extension to the Toronto plant will be ready for occupancy late this summer. Negotiations are under way for a plant in Winnipeg.

The Hon. William Finlayson, Ontario Minister of Lands and Forests, has returned to Toronto from a five-day inspection of conditions in Northern Ontario. While away Mr. Finlayson visited the pulp and paper industries at Kapuskasing and other centers, discussing with various organizations the present-day problems with which northern development is faced. The lumbering and pulp season during the winter was a good one, reports the Minister. While the crops met with failure last year, agriculturists are looking forward with optimism to this year's harvest. Snows have left the bush far wetter than usual, and at present there is little chance of a spring hazard such as gave the Forestry Department in Northwestern Ontario a trying time eleven months ago.

Among recent Montreal paper men to visit the trade in Toronto were J. B. Larkin, of the Federal Paper Company; Thomas Havill, of the Havill Paper Company; S. Rodier, of the Rolland Paper Company, and T. B. Brown, of the T. B. Little Company.

E. G. Rolph, advertising manager of the Howard Smith Paper Mills, Ltd., was in Toronto a few days last week on his return journey from the Pacific Coast. Mr. Rolph reports the outlook for the paper trade throughout Western Canada as good, with a fair volume of business doing there this spring.

Col. C. H. L. Jones was recently the recipient of a unique tribute from his former associates in the Spanish River Companies. This consisted of a beautiful leather book about 10 by 14 inches with hand tooled red leather and gold cover and containing on the first page Colonel Jones's name and titles. Then followed a full page painting of himself and an illuminated and engrossed address of handwork. The signatures of several thousand of the employees of the old Spanish River pulp and paper mills were appended to the souvenir.

G. R. Lane, superintendent of the Provincial Forestry Station at Midhurst in Simcoe County, Ont., has been appointed to the position of assistant to the chief forester of the Laurentide Division of the Canada Power and Paper Corporation, and will be forester in charge of reforestation for the firm at Grand Mere, Que. Mr. Lane has already taken up his new duties.

A. M. Wiseman, M.C., recently appointed H. M. trade commissioner at Toronto, has arrived in the city and has taken up his duties. H. F. Gurney, formerly assistant trade commissioner, has left for Winnipeg and will be in charge of the British trade commissioner's office there. James Patterson, formerly assistant trade commissioner for Trinidad, West Indies, has been appointed to the Toronto office as assistant commissioner.

The Minas Basin Pulp and Paper Mills, Ltd., is ready to ship its first load of pulp from Hantsport, on a large Government steamer which arrived at the Government docks recently. This shipment of pulp is for the Scott Paper Company, of Chester, Pa. The company will take the output of the Hantsport mill which is running full time and employing forty men.

A charter has been granted the Adelman Paper Box Company, Ltd., of Winnipeg, authorizing them to engage in business as manufacturers and dealers in paper boxes and other paper lines. Two of the incorporators are Abraham Adelman, of Winnipeg, and Nathan Adelman, of Saskatoon, Sask.

Obituary

Franklin D. Jones

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 24, 1929.—Franklin D. Jones, Washington attorney for the American Waxed Paper Association, the Paper Box Manufacturers Association, and the National Kraft Paper Manufacturers Association, died suddenly here of heart failure last week.

Formerly he was counsel for the National Dairy Products Committee and the National Wholesale Lumber Association. His book on trade association activities and the law was recognized as the standard authority in that field. He also wrote "Historical Development of the Law of Business Competition."

Mr. Jones was born in Webster, Neb., on October 5, 1887, the son of Daniel and Fannie Louise Roberts Jones. He graduated from the University of Iowa in 1910 and later studied law at George Washington University, from which he received his degree of Bachelor of Laws in 1915.

About this time he became connected with the staff of the then newly organized Federal Trade Commission, serving as acting secretary and assistant secretary. Subsequently he became an attorney for the commission and a member of its board of review.

In 1919 he resigned to become a partner in the newly organized firm of Davies & Jones. He was one of the principal counsel in the Ford Motor Company stock valuation case on the side of the former Ford stockholders, among whom were the Horace and John Dodge estates and Senator Couzens.

Mr. Jones was a Mason, a member of the Burning Tree, Congressional, Cosmos and Arts clubs of Washington and a director of the American Friends of Greece. He was married in 1916 to Aura Belle Fike of Naco, Ariz. His widow and their two children survive.

Daniel F. Emery

[FROM OUR REGULAR CORRESPONDENT]

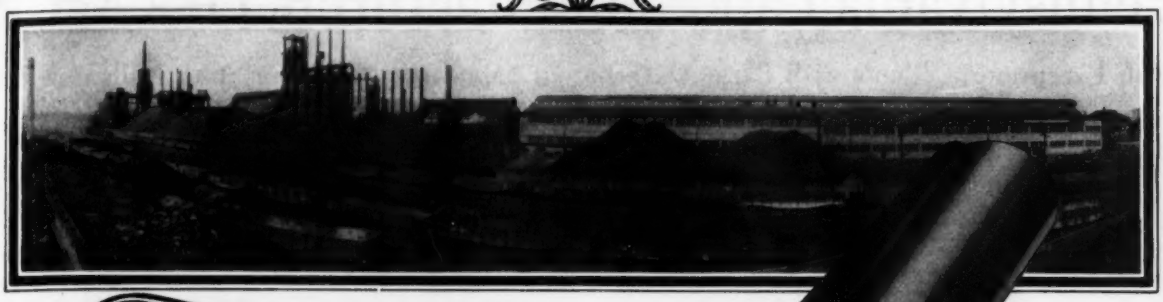
BOSTON, Mass., April 22, 1929.—Daniel F. Emery, pioneer wood pulp paper manufacturer, of Portland, Me., died April 15, aged 89. Mr. Emery was a large stockholder in the Burgess Sulphite Fibre Company, now the Brown Company, Berlin, N. H., and the Rumford Falls wood pulp industries. He was president of the Emery-Waterhouse Company, wholesale and retail hardware dealers, had been president of the First National Bank and of the Hastings Lumber Company, all of Portland. An only son, Charles A., died in San Diego, Cal., April 10. Two daughters, Constance, of Portland, and Marion, wife of Capt. W. D. Puletson, of the Navy, now at a Pacific Coast Station, are living.

May Build Big Kraft Mill at Portland

George H. Wisting, manager of the industries department of the Chamber of Commerce, Portland, Ore., has just returned to the West from an Eastern tour in the interest of bringing new industries to Portland. Included in his important report is the statement that Portland has been definitely selected as a site for a kraft pulp and fiber industry representing an investment of approximately $7,500,000, to employ 1,100 men. The actual development has been delayed temporarily owing to conditions in the security market through which financing is to be planned, and consequently the name of the corporation concerned with this development is withheld at this time.

Michigan Superintendents Meet

KALAMAZOO, Mich., April 22, 1929.—The Michigan Division of the American Pulp and Paper Mill Superintendents' Association met Thursday evening at the Post Tavern, Battle Creek. This was ladies' night for the club. In addition to dinner there were three talks. Representatives of the Union Steam Pump Company spoke on "The Application of Centrifugal Pumps for Paper Mills." E. Brazeau, of the Appleton Machine Company, Appleton, Wis., spoke on "Jordans."



Flawless--

A Distinctive Feature of Every Length of Centrifugally Cast Bronze

Shenango-Penn is the only Company that makes bronze cylinders by the ingenious centrifugal casting method.

This exclusive method makes possible the production of a bronze cylinder that is perfect in grain texture and density from end to end.

Moreover, the outside and inside surfaces possess a finish so naturally smooth and close to specified diameters that the very minimum of machining is required.

So why not avail yourself of these inherent advantages? Write us for detailed information and quotations.

SHENANGO-PENN MOLD COMPANY

Oliver Building Pittsburgh, Penna.

Works at Dover, Ohio and Sharpsville, Pa.

SHENANGO PENN CENTRIFUGALLY CAST BRONZE

Pennsylvania Paper Manufacturers Less Active

With Exception of Plants with Large Government Contracts, Keystone State Mills Are Now Operating At From 75 to 90 Per Cent Capacity—Philadelphia Paper Market Experiences Greater Activity, with Numerous Inquiries For Future Business

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., April 22, 1929.—While there was no great awakening of demand during the past week there was a more active market with frequent inquiries that indicated a livelier interest on the part of the consuming trades. Wholesale merchants and mill representatives reported a fairly gratifying volume of orders for specialties needed for publishing and printing firms with extensive plants. The cooler weather that prevailed stimulated demand for grades of paper normally draggy with the advent of spring such as corrugated and waterproof products. Sanitary products, which have been quite active, fell off to a minimum of consumption. Fine papers were confined to a narrow spotty market generally. A few social stationery requirements and grades used by manufacturing stationers, as well as uncoated book and cover papers, were in the active list, with alternating good and bad business days.

Mills in this section, except those with large government contracts, are producing from 75 to 90 per cent of capacity. Board manufacturers are perhaps the busiest. Board mills continue to cut prices to attract customers as their tonnage dwindles from the volume of business garnered when price recessions were made last January and when considerable quantities of board were ordered by the consumers at prices from $30 to $35 per ton. Of course much of this business has been reduced with shipments in carload lots to heavy users of chip and news boards. Building paper manufacturers are more active as contractors resume springtime operations. Bag manufacturers with national consumption report steadier markets but local bag producers are strong competitors under the firmer values of the larger operators whose prices were elevated 10 per cent in the earlier days of March. Roofing paper manufacturers announced a 10 per cent advance last Monday. Krafts are stabilized. Waterproofing papers are in demand and mulch papers hold well as the planting season dawns. Corrugated products are among the active list of specialties as are clothing containers and millinery sacks and boxes. Folding boxes supplied through paper houses are also among the needed springtime specialties.

Though the supply of better grade paper stocks is limited, the cheaper grades were at rock bottom doldroms as mill buying was practically nil. Board manufacturers have been buying direct from collectors through their own agents so that they have been able to secure cheaper grades of stock at the lowest prices and have been passing these lower values in raw materials on to the consumers in reduced values on the finished products. Better grades now in demand are soft and hard shavings, ledger stocks, and book stocks. These have been pretty well cleaned up in the local market so that a sudden demand would send values soaring.

Wholesale Waste Merchants Meet

The quarterly session of the Philadelphia Wholesale Waste Merchants Association will be held at the Lorraine Hotel on Thursday evening, April 25, when the members will convene in a joint social and business gathering. The group will take up matters of routine business connected with the various branches of the waste trade and then will partake of a dinner to be followed by an entertainment.

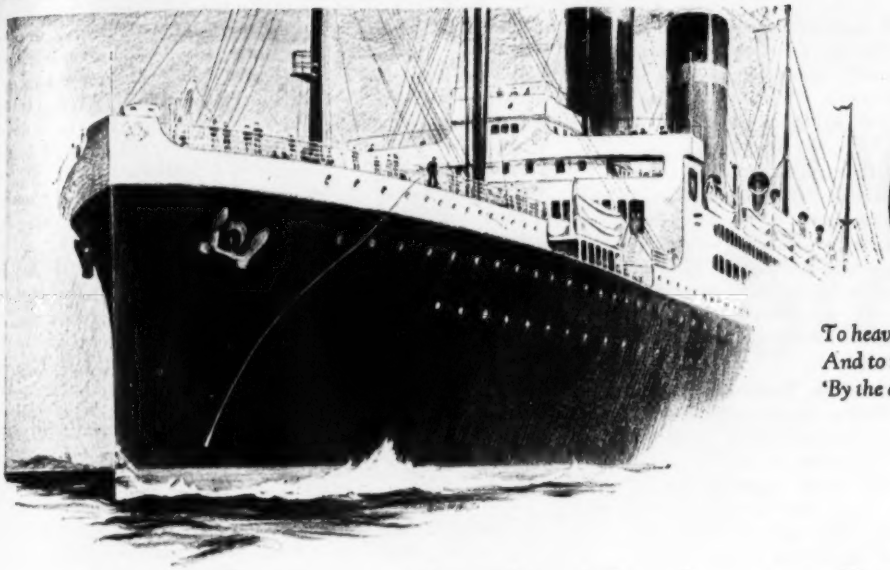
Superintendents Visit Mills

Outstanding in the entertainment features provided for the visiting mill superintendent and allied trade associates at the spring meeting of the Pennsylvania-New Jersey Divsion of the American Pulp and Paper Mill Superintendents Association held in Wilmington, Del., April 5 and 6, was the tour of the Pusey & Jones plant and the Jessup & Moore mills. The meeting of the division was held in the Dupont Hotel, where a banquet on Friday evening brought together more than 200 mill supervisors, manufacturers, and dealers in mill equipment. At this banquet Joseph E. Plumstead, general manager of the Jessup and Moore Paper Company, was host. All day Saturday business meetings and the tour of the plants occupied the attention of the superintendents. The tour of the Jessup and Moore mills was made under the direction of Vice President James G. Ramsey, a former mill superintendent of the Dill & Collins Company for more than a score of years and organizer of the Pennsylvania and New Jersey Division while in this city three years ago. He is now superintendent of the Jessup & Moore Augustine mills. G. L. Coppage, who is in charge of Pusey & Jones production, conducted the visiting mill executives over the huge paper making machinery plant and the new woodworking shop just completed.

Following a luncheon at the Dupont Hotel given by the Pusey & Jones Company and the Downingtown Manufacturing Company, the ladies of the party were shown through the flower gardens of the DuPont estates while the business session convened. R. M. Watts talked on behalf of the Cheney Bigelow Wire Works, giving a moving picture demonstration of the production of Fourdrinier wires as conducted by his concern and detailed advice on preservation and care of these mill accessories. "Grinding and Crowning of Paper Machine Rolls" was the theme of the address by Joseph Sturat, vice president of the Lobdell Car Wheel Company, in which he discussed various technical points on rolls and their application to paper making equipment. J. H. Ferguson, of the Bristol Company, talked on recording instruments and their use in paper mills. Autogenous metal coatings were the interesting products discussed by G. L. Coppage, of the Pusey & Jones Company, demonstrated by practical methods in spraying copper and other metals. A. W. Wickham, of the MacAndrews and Forbes Company, told of the installation of the chlorinating system in the Camden mills of that concern and its effectiveness. R. B. Martin, of Wallace & Tiernan, Newark, N. J., told of the installation of the chlorinating system in a number of paper mills through his firm.

At the Friday evening banquet, Mayor G. W. K. Forrest, of Wilmington, greeted the mill executives at the banquet board, and was introduced to the diners by Mr. Ramsey, who expressed his appreciation and that of his fellows for the welcome given by the city of Wilmington. Dr. Manley P. Northam, engineer of personnel service, gave an address on "Human Engineering" during the dinner. President J. E. Blosser, of the Pennsylvania and New Jersey Division, presided and opened the evening's functions with a word of cheer and with a complimentary word for the fair members of the party. He announced that a large attendance is expected at the June Convention of the Pennsylvania-New Jersey Division to be held in Wilmington and that a special train will carry the executives from Philadelphia and vicinity to that summer session.

The following officers were active in the program of the spring meeting, one of the most interesting sessions staged by the local mill executives:—President J. E. Blosser, Scott Paper Company, Chester, Pa.; Vice President James G. Ramsey, Jessup & Moore Paper Company, Wilmington, Del.; Secretary and Treasurer J. B. White Vulcanized Fibre Company, Yorklyn, Del. Those on the arrangements committee were: J. B. White, chairman, J. G. Ramsey, Joseph Plumstead and Wiliam M. Shoemaker, National Vulcanized Fibre Company.



To heave the lead the seaman sprung,
And to the pilot cheerily sung,
'By the deep—nine!'
Pearce

Industrial Soundings

AN OCEAN GIANT taking soundings along a shifting course.

Industry too can take its soundings. You have established certain pre-determined conditions which will insure quality and economical production in your plant. Only by taking soundings will you and your operators know if these conditions are being maintained.

Every jog on the chart of a Republic meter is a sounding which warns of any deviation from the course of efficient production.

Republic meters—industrial soundings, are turning the waste of today into the profits of tomorrow in thousands of plants.

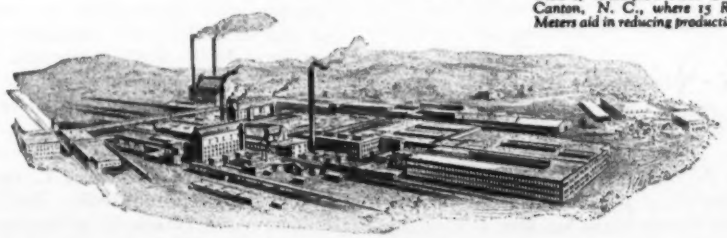
Bulletins mailed on request

REPUBLIC FLOW METERS COMPANY

Executive Offices and Plant · 2256 Diversey Parkway · Chicago, Ill.

Branch Offices in 25 Principal Cities

View of Champion Fibre Company, Canton, N. C., where 15 Republic Meters aid in reducing production costs



DOMINION FLOW METERS CO., *Toronto, Canada* ELEKTROFLO, *Berlin, Germany* ELECTROFLO METERS CO., *London, England*

REPUBLIC FLOW METERS

Among the Philadelphia mill superintendents attending were John Bingham, Dill & Collins Company: J. J. Lobb, Scott Paper Company; Dill and Collins Old Mill; David Lindsay, Jr., Lindsay Paper Company; M. Craig Maxwell, McDowell Paper Mills; Robert M. Guie, Philadelphia Felt Company and S. C. Wentz, Hinde & Dauche.

Plan Joint Meet Of Trade Associates

Another joint meeting of the members of the Philadelphia Paper Trade Association with outside associates in the wrapping paper section of the industry is being arranged under the direction of the local organization. This is the second meeting of this kind held this spring. These joint meetings are held for the purpose of educating trade associates outside of the organized bodies in the work of the national association and in the benefits of local united effort through the Philadelphia association.

Charles A. Wilder Continues On Twine Committee

Charles A. Wilder, head of Wilder Brothers, 12th and Brown streets, has been notified by the National Paper Trade Association that he has been appointed a member of the National Twine Committee, representing the Philadelphia organization. This is the second year that he has served on the Twine Committee, his reappointment having been effective last week following a meeting of that body in New York in the preceding week.

York Haven Paper Co. Changes

With the retirement of Henry W. Stokes from the presidency of the York Haven Paper Company, of York Haven, Pa., a subsidiary of the Continental Paper and Bag Corporation, the executive offices of that company have been transferred to the New York headquarters of the Continental. Until the retirement of Mr. Stokes the offices of the York Haven company were located in the Land Title Building, Broad and Chestnut streets. The offices will continue to be used as the Philadelphia branch of the corporation and the executive headquarters of the district manager, J. H. Wantling, who succeeded the late Lewis T. Condon last Fall. District Manager Wantling is also in charge of the Southern Kraft Division of the Continental Paper and Bag Corporation in this territory.

George W. Wheelwright Paper Co. Offices Moved

The former Philadelphia offices of the George W. Wheelwright Paper Company, of Leominster, Mass., have been consolidated with the New York branch and the local headquarters have been abandoned. The Philadelphia district manager, Otto W. Renner, is making his headquarters in the New York branch and will divide his time between looking after the Quaker City sales and the Metropolitan territory.

Satterthwaite-Cobaugh Co. Stocks Wheelwright Papers

As Quaker City distributor of the George W. Wheelwright Paper Company, the Satterthwaite-Cobaugh Company, 217 Chestnut street, has added the newest lines of the manufactures in book text and cover papers. They include the new shades of Corinthian Text to harmonize with similar hues in Corinthian Covers. There are now seven colors and white in both the Text and Corinthian Cover Papers of the Wheelwright lines and these correspond to the colors in the B. P. F. mark also produced by the Leominster manufacturers.

Keystone Paper Products Inc. Changes

With the reorganization of the Keystone Paper Products, Inc., the main offices and plant have been consolidated at the manufacturing headquarters of the concern, Water and Jackson streets, South Philadelphia, where the company in recent times has occupied its newly built building along a railroad siding. Following the death of the late Philip Sellers, there has been a reorganization of the personnel of the company. Richard C. Sellers remains as president, while L. M. Halverstad succeeds Philip Sellers, the late vice president. Charles Halbert is treasurer of the company and manager of production. The firm manufactures a complete line of paper tubes.

Thomas A. Kenny Selling Draper Felts

Thomas A. Kenny, formerly associated with Peter Infante in the International Trading Company, 334 South Delaware avenue, is now sole proprietor of the International Company, having acquired the interests of his late partner, who has retired from the industry. With the acquisition of the ownership of the International Trading Company, which has for many years been devoted to the wholesaling of paper stock, he has expanded the business to include the agency for the sale of felts manufactured by Draper Brothers, of Canton, Mass. He will represent the manufacturers of paper mill felts in the territory south of New York, New Jersey, Delaware and Pennsylvania. Mr. Kenny is president of the Philadelphia Wholesale Waste Merchants Association and has long been an active leader in the paper stock industry in this section.

George W. Ward Back From Southern Resorts

Returned to the Quaker City after a season spent in southern resorts, President George W. Ward, of the D. L. Ward Company, 28 South 6th street, is much improved in health. President Ward has been wintering in Nassau and other points in the West Indies. During his sojourn in the South he was joined by W. W. Seary, vice president of the company, who made a cruise in the Antilles part of his vacation plans.

Morgan H. Thomas To Tour Europe

President Morgan H. Thomas, of the Garrett-Buchanan Company, sails on May 4 for a seven weeks' tour of Europe. He will be accompanied by Mrs. Thomas and their son Ellwood, who is associated with his father in the business. The party will sail aboard the Cunard liner *Vulcania* and will tour Italy, Switzerland and France, taking in Cologne, Germany, before sailing from Havre on June 12 to arrive home by June 18, under present plans.

Paper Men Visit Champion Paper Co.

DAYTON, Ohio, April 22, 1929—The Champion Coated Paper Company of Hamilton had as its guests Friday more than eighty printers and paper jobbers from the Pittsburgh, Pa., territory. The party was arranged by Alexander Thomson, vice president in charge of sales, and E. K. Hunt, advertising manager, of the company and Ben M. Johnson, manager of the Whitaker Paper Company's branch at Pittsburgh.

The special train, known as the Whitaker-Champion Special, consisting of four sleeping cars, a club car and a diner, left Pittsburgh Thursday afternoon at 2:30. Friday morning it was placed on the Champion mills siding and soon after breakfast, the eighty guests left their berths and visited the mills.

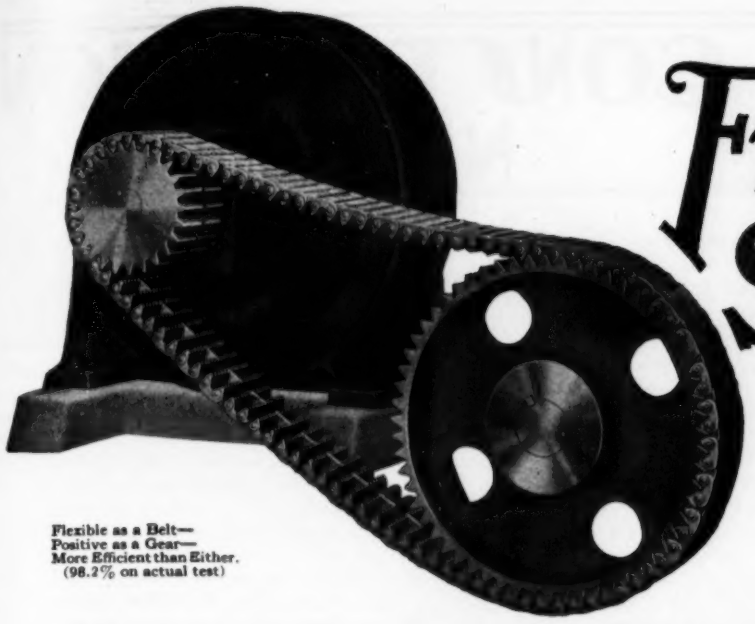
Mill No. 2 was first inspected. At noon, the guests enjoyed luncheon at the Champion Cafeteria where special preparations had been made for the visitors. During the afternoon No. 1 mill and the coating plant were inspected and later visited the Administration building.

Late in the afternoon the special train proceeded to Cincinnati where the guests were entertained at a dinner at the Hotel Sinton. The evening was pleasantly spent in Cincinnati and the train departed at 11 P. M. on the return trip to Pittsburgh, arriving there Saturday afternoon.

The Champion Coated Paper Company and the Whitaker Paper Company jointly planned the trip which was voted to have been not only entertaining but instructive as the methods of manufacture were vividly shown in practical operation. The idea was to give the jobbers and printers for the Champion in the Pittsburgh district, a closeup view and an insight into the manufacture of coated paper.

Zeloid Products Corp. Incorporates

DOVER, Del., April 22, 1929.—The Zeloid Products Corporation, Resident Agent Owen T. Wharton, 319 West Division street, Dover, has been incorporated under state laws with a capital of $2,000,000.00 and 200,000 shares of all common stock. The corporation owns the Hetzel patents and will manufacture zeloid, a transparent paper, made by the viscose process; also glassin and waxed glassin. A prominent feature in the plans of zeloid is its use for transparent wrappers, bags, etc., alone and in combination with glassin.



Flexible as a Belt—
Positive as a Gear—
More Efficient than Either.
(98.2% on actual test)

From Stock!

½ H. P. to
60 H. P.

LINK-BELT
SILENT CHAIN DRIVES

In speed ratios of 1 to 1 up to 7 to 1

Carried in Stock and For Sale by

BALTIMORE, MD.
H. E. Crook Co., Inc.

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BOSTON, MASS.
Bellamy-McKim Co.

BUFFALO, N. Y.
J. A. Webb Belting Co., Inc.

CHARLESTON, S. C.
The Cameron & Barkley Co.

CHATTANOOGA, TENN.
Mills & Lupton Supply Co.

CHICAGO, ILL.
Chicago Pulley & Shafting Co.
Reeves-Bond Sales Co.

CINCINNATI, OHIO
The Buckeye Equipment Co.

CLEVELAND, OHIO
The Cleveland Tool & Supply Co.

COLUMBUS, IND.
Reeves Pulley Co.

COLUMBUS, OHIO
The Ross-Willoughby Co.

DALLAS, TEXAS
The Murray Co.

DAYTON, OHIO
The Klinger-Dills Co.

DENVER, COLO.
Hendrie & Bolthoff Mfg.
& Supply Co.

DES MOINES, IOWA
Electrical Engineering &
Construction Co.

DETROIT, MICH.
Link-Belt Company

EVANSVILLE, IND.
Evansville Supply Co.

FORT WAYNE, IND.
Ft. Wayne Pipe & Supply Co.

HOUSTON, TEXAS
Houston Armature Works

INDIANAPOLIS, IND.
Indianapolis Belting & Supply Co.
Link-Belt Company

JACKSONVILLE, FLA.
The Cameron & Barkley Co.

KANSAS CITY, MO.
Webb Belting Co.

LITTLE ROCK, ARK.
Central Supply Co.

LOS ANGELES, CALIF.
Link-Belt Meese & Gottfried Co.

MEMPHIS, TENN.
Riechman-Crosby Co.

MIAMI, FLA.
The Cameron & Barkley Co.

MILWAUKEE, WIS.
American Machinery Co.

MINNEAPOLIS, MINN.
Link Belt Supply Co.

NEWARK, N. J.
Venino Brothers & Co.

NEW ORLEANS, LA.
R. J. Tricon Co.

NEW YORK, N. Y.
Watson-Flagg Engineering Co.

OMAHA, NEB.
American Machinery & Supply Co.

PATERSON, N. J.
Watson-Flagg Engineering Co.

PHILADELPHIA, PA.
Chas. Bond Co.
Rodney Davis
Link-Belt Company

PITTSBURGH, PA.
Colonial Supply Co.

PORTLAND, ORE.
Link-Belt Meese & Gottfried Co.

PROVIDENCE, R. I.
R. I. Supply & Sprinkler Co.

RICHMOND, VA.
James McGraw, Inc.

ROCHESTER, N. Y.
Cross Brothers Co., Inc.

ROCKFORD, ILL.
Swords Bros. Co.

SAN FRANCISCO, CALIF.
Link-Belt Meese & Gottfried Co.

SEATTLE, WASH.
Link-Belt Meese & Gottfried Co.

ST. LOUIS, MO.
Briner Electric Co.

SYRACUSE, N. Y.
Roberts Tool & Supply Co.

TAMPA, FLA.
The Cameron & Barkley Co.

TOLEDO, OHIO
National Supply Co.

TRENTON, N. J.
Manufacturers Selling Co.

LINK-BELT COMPANY

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CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Somerville, Mass.—The Agar Manufacturing Corporation, Somerville, has approved plans for the immediate construction of an addition to its corrugated paper box manufacturing plant at the foot of Clyde street, Somerville Junction. It will be one-story, 50 x 260 feet, reported to cost in excess of $70,000, with equipment. The new unit will provide for considerable increase in present output. Main mill of the company is at Whippany, N. J.

Chicago, Ill.—The Evans Fibre Box Company, 3301 West 47th place, manufacturer of fibre boxes and containers, has begun work on its proposed new addition on 46th place, to be one-story, 135 x 250 feet, brick. The new unit will be used for production increase, as well as for storage and distributing service, and will include a freight platform 10 x 250 feet, and other shipping facilities. Project will cost close to $100,000, with equipment. A. Epstein, 2001 West Pershing road, Chicago, is architect and engineer.

Chicago, Ill.—The Traver Paper and Manufacturing Company, 358 West Ontario street, recently organized with a capital of 20,000 shares of stock, no par value, is said to be arranging for the early operation of a local plant for the manufacture of a line of paper goods. The new company is headed by George W. and Paul C. Traver.

Greenville, Miss.—The Greenville Insulating Board Corporation, a subsidiary of the Paepcke Corporation, 111 West Washington street, Chicago, Ill., affiliated with the Chicago Mill & Lumber Company, same address, has begun the construction of a new local plant for the manufacture of insulating wallboard products, to consist of several units to develop large capacity. Estimated cost has not been announced. Hardy S. Ferguson, 200 Fifth avenue, New York, is architect and engineer.

Neenah, Wis.—The Neenah Paper Company, North Commercial street, has received approval from the state, for proposed extensions and improvements in beater room at local mill, reported to cost more than $40,000, with equipment. It is understood that general contract will be awarded to the C. R. Meyer & Sons Company, 50 State street, Oshkosh, Wis.

Newark, N. J.—The property acquisition at Newark of Peter J. Schweitzer, Inc., 170 Cornelison avenue, Jersey City, N. J., manufacturer of tissue and other papers, recently referred to in these columns, consists of the former plant of the Stanwood Rubber Company on Frelinghuysen avenue, with an adjoining tract of about 6½ acres of land, fronting on the line of the Pennsylvania railroad. It is said that a consideration of more than $400,000 was given for the property. The new owner will remodel and equip for a branch plant, and proposes to have the unit ready for service in about 30 days. It will be operated in conjunction with the present factory at Jersey City, which will be continued in service as heretofore.

Philadelphia, Pa.—The Reyburn Manufacturing Company, 32nd street and Allegheny avenue, manufacturer of tags, labels and similar paper goods, is arranging for the early construction of its proposed new mill addition, designed for large advance in present output. It will be five-story and basement, 100 x 245 feet, steel and concrete, with metal sash, metal doors and other fireproofing features. Unit is estimated to cost approximately $375,000, with machinery. LeRoy B. Rothschild, 215 South Broad street, is architect.

Greensboro, N. C.—The Carolina Carton Company, recently organized by William E. Beckwith, Greensboro, and associates, with capital of $100,000, is said to have plans maturing for the operation of local plant for the manufacture of cartons and other paper containers. Extensive capacity will be arranged. D. H. Dillard, 14 Woodland avenue, Lynchburg, Va., is interested in the new organization.

Waterford, N. Y.—Following recent court decision in favor of the Mohawk Paper Makers, Inc., Waterford, ordering Henry Ford & Son to remove flashboards from their power dam on the Hudson River near Troy, the defendants have secured an order for a review of the case. The flashboards on the main spillway have been protested by the paper company which contends that these obstructions decrease the flow of water required for the proper operation of its mills.

Chicago, Ill.—The Lanzit Corrugated Box Company, 2509 West 22nd street, has filed plans for construction of proposed new plant addition on site lately purchased at 24th and Rockwell streets, reported to cost close to $150,000. General contract for masonry has been let to the L. Godgen Company, Chicago, and work will be placed in progress at once. A. Epstein, 2001 West Pershing road, is architect and engineer.

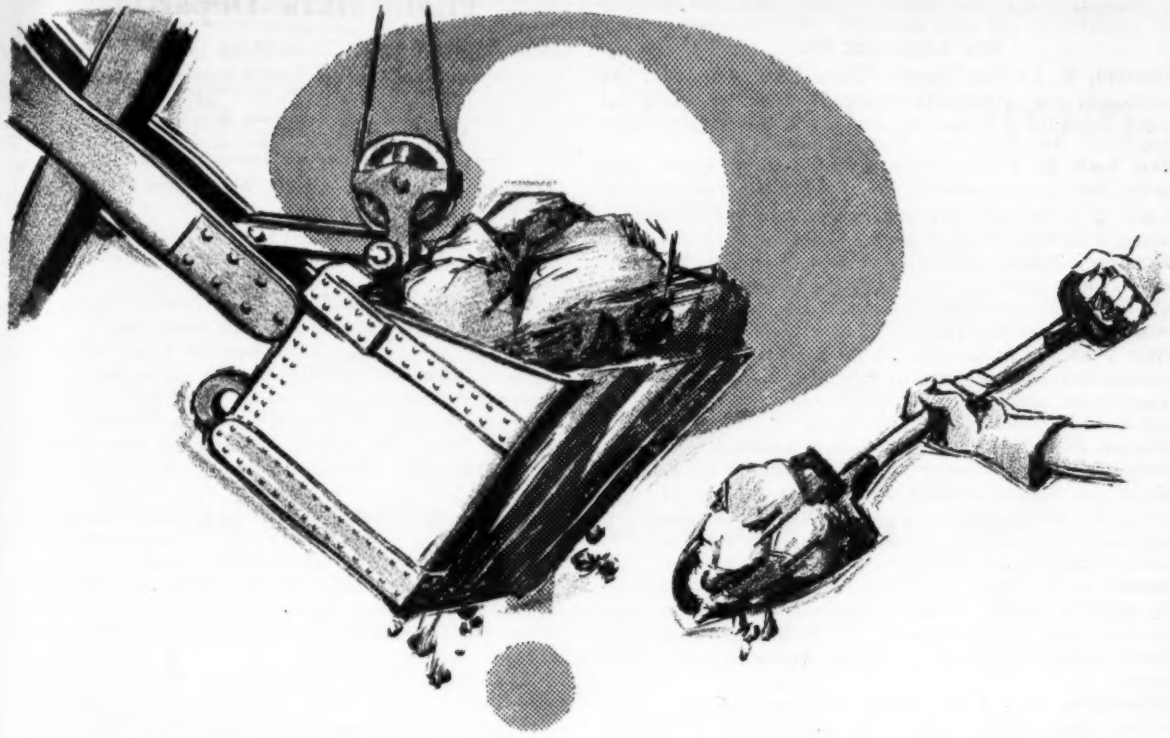
Manchester, Conn.—The Rogers Paper Manufacturing Company, 218 Hartford road, has awarded a general contract to the Aceto-Smith Company, 512 East Center street, Manchester, for alterations and improvements, including construction of two small one-story sections. Work will be placed in progress at once. Estimated cost not announced.

Appleton, Wis.—The Paper Package Company, lately organized with capital of $25,000, plans operation of local plant for the manufacture of paper boxes, cartons and other paper specialties. The new company is headed by Edward J. McMurchie, 208 Main street, Neenah, Wis. Harry J. Kahler, 1015 East Pacific street, Appleton, is also interested in the organization.

St. Louis, Mo.—Robert Gaylord, Inc., 2817 South 11th street, manufacturer of corrugated board products, has approved plans for the construction of new addition, to be one-story, brick and steel, reported to cost more than $24,000, with equipment. C. W. Gaylord is president.

Montreal, Que.—Building Products, Ltd., Montreal, manufacturer of wallboard and kindred specialties, is developing a new department to be devoted to the manufacture of paper boxes and cartons. Equipment has been arranged at one of the company plants for initial operations, to be carried out on a moderate basis. Should the market for the new product prove as now anticipated, the company proposes to develop large capacity in this line. Raw materials will be secured from the St. Maurice Valley Corporation in which the Building Products, Ltd., is interested; it also holds a 50 per cent interest in Forest Products, Ltd., which produces wallboard and kindred materials.

Cornwall, Ont.—The Howard Smith Paper Mills, Ltd., Cornwall, has awarded a general building contract to the Deakin Construction Company, 689 St. Catharine street, West, Montreal, for a



Steam Shovel or Spade . . . . . *which would you choose ?*

There is no question about the superior advantages of a steam shovel over a spade for doing a real job. And there is no more question about the superiority of the Noble & Wood High Density Beater over the ordinary Holland type.

This modern Beater handles triple the usual furnish in the same floor area as a single old type beater. Freely circulates and hydrates stock of unusually high density, mixing color quickly and uniformly, without pockets or dead spots.

It SAVES!—by reducing motors, belts, equipment, men; by efficiently utilizing precious floor space; by producing a firmer, tougher stock that minimizes broke and rejects; by increasing production and eliminating frequent adjustments at the slice on the better grades of paper.

If your common-sense approves the use of a steam shovel on an excavating job, it certainly should suggest that you investigate this new High Density Beater and find out how it can serve YOU.

NOBLE & WOOD
MACHINE COMPANY
Hoosick Falls New York

new one-story boiler plant addition will proceed with work at once, estimated to cost close to $25,000, with equipment.

New Companies, Etc.

Paterson, N. J.—The Paterson Paper Stock Company, has been incorporated with capital of $25,000, to manufacture and deal in paper products, etc. The incorporators are M., R., and Angelo Lobosco, 121 McBride avenue, Paterson.

New York, N. Y.—The Four In One Carbon Paper Company has been incorporated with capital of $15,000, to manufacture and deal in carbon and other processed papers. The company is represented by Flynt, Sully & Moran, 43 Exchange place.

Waterbury, Conn.—The City Paper Company, 52 Canal street, has been organized with capital of 150 shares of common stock, to deal in paper goods. The company is headed by E. Shanahan, M. and David Harris. The last noted is president.

New York, N. Y.—George W. Stretton, Inc., has been incorporated with nominal capital of $5,000, to manufacture and deal in paper boxes and containers. The company is represented by Irving Katz, 80 William street, New York.

Chicago, Ill.—The Feldco Looseleaf Corporation, 357 North LaSalle street, has been incorporated with capital of 500 shares of stock, no par value, to manufacture and deal in a line of loose-leaf papers. The incorporators are M. Newton Feldmann, and David and Carlyle Feldmann. The company is represented by Theodore Rubovitz, 38 South LaSalle street, Chicago.

Queens, L. I.—Henry Schroeder, Inc., has been incorporated with capital of $20,000, to manufacture and deal in paper bags, boxes and other paper containers. R. B. Stringham, 410 East Tremont avenue, New York, is principal incorporator and representative.

Philadelphia, Pa.—H. H. Barton & Son Company, State Road and Bleigh street, Philadelphia, manufacturer of abrasive and other papers, has filed notice of organization to operate in the state of New York, with capital of $200,000.

Cleveland, Ohio—The Forest City Waste Paper Company has been incorporated with capital of $10,000, to deal in paper and paper goods. The incorporators are Saul and S. T. Fineman, and E. and H. L. Goldman, all of Cleveland.

Philadelphia, Pa.—The Diamond State Fibre Company has filed notice of change of name to Taylor & Company, Inc.

Wichita Falls, Tex.—The Empire Paper Company has filed notice of increase in capital from $30,000 to $50,000, for general expansion.

Chicago, Ill.—Feldco Looseleaf Corporation, 357 North LaSalle street, has been incorporated with capital of 500 shares of stock, no par value, to manufacture and deal in loose leaf paper products, etc. The incorporators are M. Newton Feldman and David and Carlyle Feldman. The company is represented by Theodore Rubovitz, 38 South LaSalle street.

Japan's Pulp and Paper Imports

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 17, 1929.—Imports of pulp for paper making into Japan during the month of January totaled 8,268 tons of which 4,501 tons came from Canada, 1,629 tons from the United States, 1,591 tons from Sweden. In addition to these imports domestic mills produced 21,262 tons of chemical pulp and 19,627 tons of mechanical pulp.

Imports of paper and paper products into Japan during January amounted to 3,546 tons valued at $544,942.

Brantford Roofing Co. to Start Thorold Mill

The Brantford Roofing Asphalt and Paper Company, Ltd., with general offices at Brantford, which has acquired the Superior Paper Mills, Ltd., at Thorold, Ont., is making extensive improvements to the mill and will operate it on roofing felts, sheathings and building paper specialties. The improvements will cost from $75,000 to $100,000. The output will be taken largely by the Brantford Roofing Company, Ltd.

Trade Mark Department

CONDUCTED BY NATIONAL TRADE-MARK CO., WASHINGTON, D. C.

The following are trade mark applications pertinent to the paper field pending in the United States Patent Office, which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade Mark Company, Barrister Bldg., Washington, D. C., trademark specialists. As an additional service feature to its readers, PAPER TRADE JOURNAL gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering.

PLEE-ZING—No. 268,398. George W. Simmons Corporation, New York City. For toilet paper.

STENOPAL—No. 277,435. Fred J. Kline, Long Island City, N. Y. For loose-leaf binders, notebooks, notebook holders, and line markers.

FLEXLINED—No. 277,726. The Paper Service Company, Lockland, Ohio. For burlap-backed asphalt creped paper.

CAVALIER—No. 278,146. The Albemarle Paper Manufacturing Company, Richmond, Va. For blotting paper, book paper, envelope paper, wrapping paper, waxed paper, etc.

OLD COLONY—No. 277,079. Old Colony Envelope Company, Westfield, Mass. For writing and printing paper, mailing envelopes, paper and cardboard for use as greeting and announcement cards.

OFSCWARE—No. 279,105. Old Colony Envelope Company, Westfield, Mass. For writing and printing paper, mailing envelopes, cards for announcements and greeting purposes.

SIGHT SAVER—No. 279,203. Western Tablet and Stationery Corporation, Dayton, Ohio. For writing tablets, notebooks, memorandum books, composition books, loose-leaf tablets, and fillers and paper therefor.

INTERNATIONAL PAPER COMPANY—No. 276,614. International Paper Company, New York. For book paper, bond paper, envelope paper, waxing paper, ledger paper, writing paper.

LINENTONE—No. 278,049. The Menasha Products Company, Chicago. For paper napkins.

KINGS KRAFT—No. 278,351. Kingsport Press, J. J. Little & Co., Inc., Kingsport, Tenn. For air-brush-finished book covers.

RED BAND GUIDES—No. 278,373. Yawman & Erbe Manufacturing Company, Rochester, N. Y. For filing equipment, particularly file guides for filing cabinets.

JUMBO—No. 278,986. Egg Saver Package Company, Bordentown, N. J. For cardboard flats or pads for use in egg cases.

BAKER'S FRIEND PIE PANS—No. 278,536. Graham Paper Company, St. Louis, Mo. For pie pans made from paper fiber.

James W. Sewall Reports More Activity

James W. Sewall, consulting forester, of Old Town, Maine, reports a picking up of business after what has been an unusually quiet winter. His organization has recently had cruisers at work in Western Ontario, and at present are cruising a quarter of a million acres in Maine.

Mr. Sewall is also doing considerable forest planting this Spring, having started that work in New Jersey, and proposing to continue northward with the season.

The depression in pulp and lumber circles which has been so severe during the last few months inevitably affects forestry and cruising work, which suffers in common with all research. It is hoped that the increased activity noted with regard to the Sewall organization may be slightly indicative of a change for the better.

No Great Change Probable in Paper Tariff

WASHINGTON, D. C., April 10, 1929.—The subcommittee on paper of the Ways and Means Committee of the House of Representatives of which Representative Davenport of Iowa is chairman held its first meeting on the tariff on last Saturday.

Meetings of the subcommittees and the full committee are always in executive session of the members have agreed not to discuss the proposed rates for publication. It is not believed, however, that aside from tightening up on classifications that there will be any very great changes in the present paper schedule.

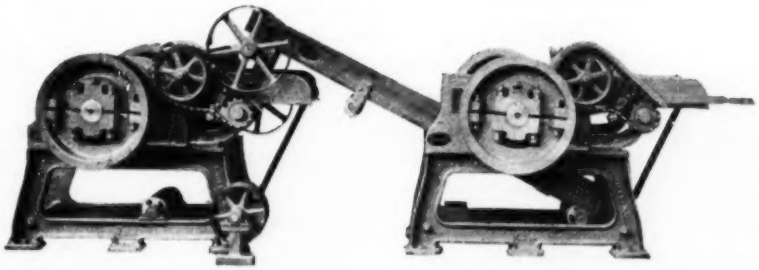
RAGS - BURLAP - BAGGING - ROPE

Magazines, Catalogs, Old Papers and All Grades of Rags

Cut quickly and efficiently with the

TAYLOR, STILES & COMPANY GIANT REG. U.S. PAT. OFF. RIEGELSVILLE, N.J. U.S.A.

The Standard Of The World For 59 Years



This is the GIANT 3-B CUTTER WITH A CAPACITY OF 3000 lbs. PER HOUR

Giant Rag Cutters Have Capacities of From 1 to 5 Tons per hour

RAG CUTTER KNIVES—ROLL BARS—BED PLATES

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RIEGELSVILLE, N. J.

CANADIAN REPRESENTATIVES
Waterous Limited, Brantford, Ont., Canada

SOLE AGENTS FOR EUROPE
R. J. Marx, 133-139 Finsbury Pavement, London, E. C.

New York Trade Jottings

Parsons & Petit, selling agents of the Freeport Sulphur Company, anounce the removal of their offices after April 27 from 63 Beaver street to 26 Beaver street, New York.

* * *

The Crosby Paper Stock Company, dealers in paper mill supplies, of 43 Crosby street, New York, have acquired an additional warehouse at 76 Wooster street, New York.

* * *

The American Paper and Pulp Association, 18 East 41st street, New York, announces the election of the Badger Paper Mills, of Peshtigo, Wis., to membership of the organization.

* * *

John J. Byrnes, formerly manager of the paper stock department of Atterbury Bros., Inc., is now associated with Sol Ash, Inc., dealers in paper mill supplies, of 1440 Broadway, New York.

* * *

Gatti Paper Stock Corporation, dealers in paper mill supplies, announce their removal from 41 East 42nd street, to the new Chanin Building, 122 East 42nd street, New York. Telephone 9167-8-9.

* * *

Report of MacAndrews & Forbes Company, New York, manufacturers of box-board, etc., for year ended December 31, 1928, shows net profit of $1,224,186 after expenses, federal taxes and other deductions, equivalent after 6 per cent preferred dividends to $2.90 a share on 378,500 no-par shares of common stock.

* * *

The International Combustion Engineering Corporation directors have voted to offer 50,000 shares of 7 per cent convertible no par preferred stock now in the treasury to preferred and common stock holders of record April 26 at $100 a share, and accrued dividends on basis of 1-20th of a share for each share of common and preferred now held.

* * *

Mathieson Alkali Works, Inc., reports for quarter ended March 31, 1929, net income of $506,675 after depreciation, federal taxes, etc., equivalent after dividend requirements on 7 per cent preferred stock, to $3.15 a share earned on 147,082 shares of no-par common stock. This compares with $429,463 or $2.62 a share on 147,207 shares of common in first quarter of 1928.

* * *

Robert Wilson has purchased the building formerly belonging to the Chase Brass and Copper Company, at 90-92 White street, between Lafayette street and Broadway. It is a heavily constructed warehouse building with a carrying capacity of 400 lbs. per square foot on the ground floor. The business of the Robert Wilson Paper Corporation was removed to this building on Thursday, April 26. The new telephone number is Canal 5721 and 5722.

* * *

William Rocamora & Co., importers of casein, formerly located at 44 East 25th street, New York, has been dissolved. William Rocamora, of this concern, is now associated with Adolphe Hurst & Co., Inc., 420 Lexington Avenue, Graybar Building, New York, where he will be manager of the Casein Department. Rocamora & Co. were United States agents for Melano & Pettigrani, of Buenos Aires, and in his new connection Mr. Rocamora will handle the products of this concern along with the French caseins and California caseins.

* * *

Clarence A. Brown has been elected president of the Cornstalk Products Company, 42 Broadway, New York, succeeding W. Jule Day, who becomes chairman of the board. Mr. Brown was formerly vice president of Kelly-Springfield Tire Company. R. E. Owen and Scott McLanahan have been elected directors. Cornstalk Products Company has spent $1,500,000 in research and development work and is prepared to increase the investment to $2,000,000, according to Mr. Day. Part of the added capital will be used to increase output of pulp from cornstalks.

* * *

Texas Gulf Sulphur Company, Inc., New York, reports for quarter ended March 31, 1929, net income of $3,880,260 after depreciation and federal taxes but before depletion, equivalent to $1.52 a share earned on 2,540,000 shares of no-par stock. This compares with $3,087,839 or $1.21 a share in first quarter of 1928. During first quarter of 1929, the company decreased its reserves, including reserves for depreciation and federal taxes, by $157,193, making total of these reserves $11,502,006 on March 31, last. All assets subject to depreciation in connection with company's operations at Gulf, Texas, are now entirely offset in these reserve accounts.

* * *

George Hoff, of the Sani Paper Products Company, Philadelphia, was the principal speaker at the regular weekly luncheon and meeting of the New York Division of the Salesmen's Association of the Paper Industry, held at the Canadian Club last Monday. Mr. Hoff demonstrated the paper plates manufactured by his organization for the baking industry, which he claimed were more sanitary and economical than tin plates and which are being adopted in bakeries throughout the country. He claimed that his company hoped to make a million plates per day in the near future. The plates are made of cylinder board of which 100 pounds are used to produce 1,000 plates.

* * *

Summerfield Eney, formerly associated with the Harris-Seybold-Potter Company as offset press salesman, has been made sales promotion and service man for the Champion Coated Paper Company, of Hamilton, Ohio. Mr. Eney has been in the printing business since he was a boy, having worked as a pressman and press room foreman. He has a wide knowledge of both letter press and offset processes. He will be located in the New York office of the Champion Coated Paper Company at 2 Lafayette street, under the supervision of George S. Johnston, manager of the New York branch. Mr. Eney has a wide acquaintance in the metropolitan area and is a director of the Printing Crafts Club and a member of the Printing Supply Salesmen's Guild.

Bids and Award for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 24, 1929.—The R. P. Andrews Paper Company has been awarded the contract for furnishing the Government Printing Office with 7.100 pounds (75,000 sheets) of 26x34 95½, 100 per cent rag white bond paper at 31 cents per pound, bids for which were received on March 27.

The Printing Office has received the following bids for 60,000 pounds of colored calendered tag board in 23½ inch rolls;; Whitaker Paper Company, at 7.93 cents per pound; R. P. Andrews Paper Company, 7.56 cents; Atlantic Paper Company, 7.78 cents; and Barton, Duer & Koch Paper Company, 7.84 cents.

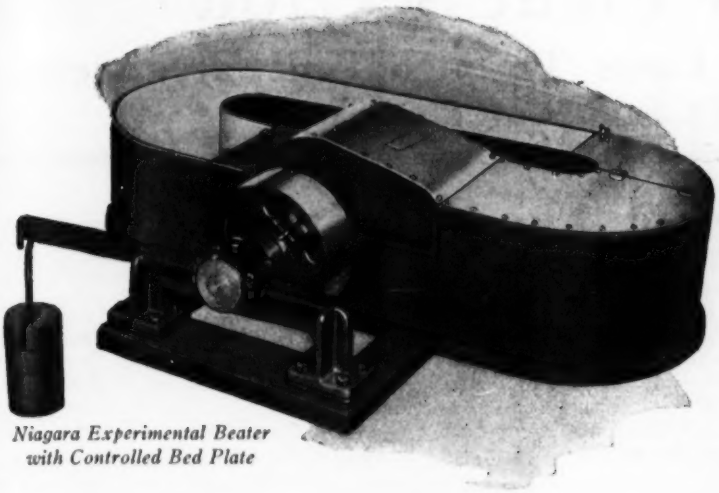
The following bids were also received for 15,000 pounds of the same manila; Reese & Reese, at 7.05 cents per pound; Whitaker Paper Company, 7.145 cents; R. P. Andrews Paper Company, 6.99 cents; Atlantic Paper Company, 6.98 cents; and Barton, Duer & Koch Paper Company, 7.2 cents.

Definition of News Print Paper

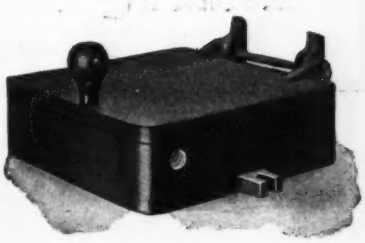
[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 24, 1929—The proposed definition for news print paper to be inserted into the new tariff bill "leaked" out last week. It is reported as; "Machine finished paper, commercially known as news print, except paper commercially or commonly known as rotogravure paper for use in the manufacture of newspapers."

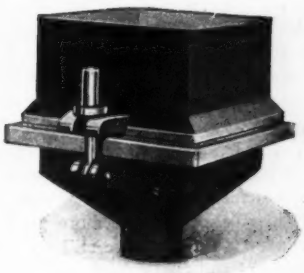
At the time this is written members of the Ways and Means Committee refuse to state whether this definition is in its final form or not.



Niagara Experimental Beater with Controlled Bed Plate



Valley Hot Plate for Drying Test Sheets



Valley Sheet Mould for Forming Test Sheets

Valley Hydraulic Press for Removing Water from Sheets

-and frequent testing

will save materials, time and effort. It is less expensive to conduct tests on a small scale with laboratory equipment than it is to experiment in the mill itself.

—and frequent testing insures quality of product. Tested materials can be put through the mill with the satisfaction and knowledge that results will be sure. The quality will be the same throughout a run and the same on repeat orders.

Valley Laboratory Equipment is original testing apparatus developed by practical and technical men in our cooperative mill laboratories—and backed by installations in over 100 mills throughout the country.

A copy of our new Laboratory Booklet will be sent upon request. It contains information of interest to every mill executive. Write for your copy now.

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Machinery for Paper and Pulp Mills

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Power Plant Section

Reducing Power Costs Through Unit Treatment

Conducted by Reginald Trautschold, Consulting Engineer

Modernizing The Power Plant

Refractories and Boiler Furnace Linings

The high heat developed in the modern steam boiler furnace, by reason of the heavy pressures now employed, superheating, operation at elevated boiler ratings, firing on pulverized coal, oil and gas, has literally revolutionized practices in boiler settings and refractory applications. All of the larger boilers installed recently in pulp and paper mill plants, for instance, have been equipped with water walls. Such installations have been quite numerous, but for each of these advanced applications there are still many mill power plants which have to make the best of equipment lacking such refinements; equipment still standard, of relatively high efficiency, which affords all kinds of opportunities of being brought up to date in respect to furnace and firebox construction. An existing boiler furnace may perhaps not measure up in all respects to the recent installations in the more progressive pulp and paper mill power plants, but there are still apt to be possibilities that it may be improved and operated at a considerably higher rating without added upkeep and maintenance expenses or imposing the liability of costly outage.

Considering simply the boiler furnace, economical steam production is largely a question of employing suitable boiler settings and refractories. While there is no one refractory that can be termed a panacea for all furnace troubles, the refractory question is a highly important one in the modernizing of the boiler furnace. Not only is the quality of the firebrick or refractory blocks an extremely important factor, but of quite equal importance are the construction of furnace linings and their protection. The latter, in fact, are probably the more important, for though there has been a rather marked tendency toward the employment of carborundum and other silicon carbides, rather than fire clays, for refractories the proper protection of fire clays has permitted the attainment of results of quite high order in many instances, results which compare very favorably with those which have been accomplished with higher priced materials and so-called super-refractories.

Before taking up a consideration of the customary methods of protecting refractory furnace linings, however, it might be well to stress one of the essentials for satisfactory brick work. It, incidentally, is just as important whether ordinary fire clay bricks are employed or the highest priced super-refractory blocks.

It is simply that it is of the utmost importance that all brick and blocks be uniform in size as well as in quality and texture. This makes possible the close and uniform brick to brick contact, with the thin, regular joints that are the earmarks of good masonry and long-lived construction. Such brick mean uniform courses, avoiding shearing stresses, and a substantial saving in the cost of initial settings, by the elimination of gauging and sorting. Thick, irregular joints are always vulnerable spots in the masonry construction and should be most carefully guarded against.

Thermal conductivity, load-bearing ability, resistance to clinkering, thermal expansion, resistance to spalling, heat resistance and other physical characteristics of the brick or blocks are most important considerations, of course, but they can hardly be enlarged upon here, since they depend in large measure upon the variety, texture, and quality of the refractory material. It will suffice to say that whatever the refractory employed, it should be quality material of its kind.

Joints and Bonds

The cement in which the brick are laid, however, well deserves some special consideration. This is particularly true in the laying of ordinary fire clay firebrick. In such construction, it would appear that finely ground clay of the same quality as the brick would prove quite satisfactory. Clay shrinks under heat, however, and is quite liable to drop out of the joints, unless construction is tight and the joints unusually thin and fine. If the clay is not of high quality, it melts at comparatively low temperatures and fluxes with the brick, destroying both. On the other hand, a pure clay which will last under heat has no adhesive or bonding qualities and will not harden sufficiently to remain in the joints under the "breathing" which occurs in all furnaces with changes in the temperature. If a temperature of upward of 2,400 degrees Fahrenheit is attained, the clay will vitrify on the surface, the body remaining relatively plastic.

Fire-wall construction, particularly when the refractory is to be subjected to the higher temperatures which are essential for improved boiler operation, demand that the cement employed possess strong bonding qualities. Otherwise, the brick will have a tendency to move and shift, extruding the cement, opening up joints and possibly breaking out in serious cracks in the boiler walls, where the unsecured joints have spread. A so-called high-temperature cement should be used, one which will well withstand any degree of temperature which may be encountered.

Such a cement may be an intimate mixture of finely divided silicon-carbide crystals and some high grade pulverized fire clay. A cement of such consistency is considered excellent for laying firebrick wherever a high quality refractory binder is needed, coating any furnace wall to prolong its life, patching and building out furnace walls which have been burned into and eroded at the fire line, coating furnace-door liners and the walls of oil-burning furnaces to guard against destruction from the impingement of oil flames.

A high temperature cement having chrome ore as its chief component is another of the bonds which has proved successful under exacting conditions of service. It is a so-called neutral refractory, resisting the slagging attack and destructive action of fuel ashes and furnace products of either acid or basic character. It is exceedingly tenacious, holding its bonding qualities at high temperatures, is free from shrinkage and when set is markedly resistant to spalling.

Protection of Furnace Walls

The all important protection of furnace walls at high temperatures commonly encountered in the modern boiler furnace, whatever may be the variety and construction of the refractory employed, whether clay firebrick, carborundum blocks, a jointless monolithic lining or other form, is well effected, as was discussed

The Paper Industry Pays Too Much

ITS lubrication costs are high. A million dollars a year is being wasted! Paper mills are not only using an unnecessarily large gallonage, but lubricants are regularly specified which are not right for the purpose. There is too much buying on a price basis.

The right lubricant in the right place and just enough of it —no more—is the answer. That is the plan upon which The Texas Company operates. Its Lubrication Engineers are specialists in Paper Mill lubrication. They know conditions and know how to meet them—and they are supported by a Texaco Lubricant for every known purpose.

Texaco Regal Oils, Calendar Lubricants, High Temperature Greases, Star Greases and Cylinder Oils are saving money in hundreds of paper mills today.

The Texas Company welcomes inquiries. Texaco Lubrication Service is everywhere available.

TEXACO LUBRICANTS

THE TEXAS COMPANY
17 Battery Place
NEW YORK CITY

TEXACO

Offices in
Principal Cities

THERE IS A TEXACO LUBRICANT FOR EVERY PURPOSE

in these pages in the issue for October 4, 1928, by the air cooling of the face of the refractory walls. In this previous discussion, such construction was considered from two aspects: as an economical and efficient air preheater and as furnace lining protection. Another reason why air cooling is employed for furnace walls, possibly the principal one, is as a prevention to the formation and adhesion of clinkers to those portions of the furnace wall surface in contact with the incandescent fuel and as protection against the fluxing and fusing of the exposed wall surfaces where the higher furnace heats prevail in upper zones.

For clinkers to adhere tightly, literally weld, to the furnace walls necessitates that both the clinker and the refractory wall attain a common softening temperature at which they will merge and become one on cooling, the eutectic point. If the furnace wall temperature is kept slightly below such point, no permanent weld can be formed between the clinker and furnace wall. It is the important function of air cooling the refractory wall lining to bring about just this difference in temperatures between the furnace wall and the contacting clinker. A continuous circulation of air behind the refractory lining draws off a certain portion of the heat taken up by the refractory, so that it, the refractory furnace lining, may not attain the temperature balance, in respect to the heat of the clinker, which is necessary for the tight adherence of the clinker. No great amount of heat has to be withdrawn from the refractory in this process, simply enough to destroy the possible eutectic temperature balance.

The amount of heat actually taken out of the furnace walls in this manner to safeguard the refractory linings is, in fact, insignificant so far as such withdrawal has an effect on combustion economy, but nevertheless the heat laden air which is discharged from the air spaces behind the refractory may be utilized to advantage, conserving to the full the heat withdrawn from the furnace. As previously mentioned, the air cooling process functions as would an air preheater, supplying hot air to stimulate combustion and better furnace efficiency, in the case of a stoker fired boiler, or, in the case of boilers fired on pulverized coal, to assist in drying the fuel, for flame control and as secondary air for promoting combustion.

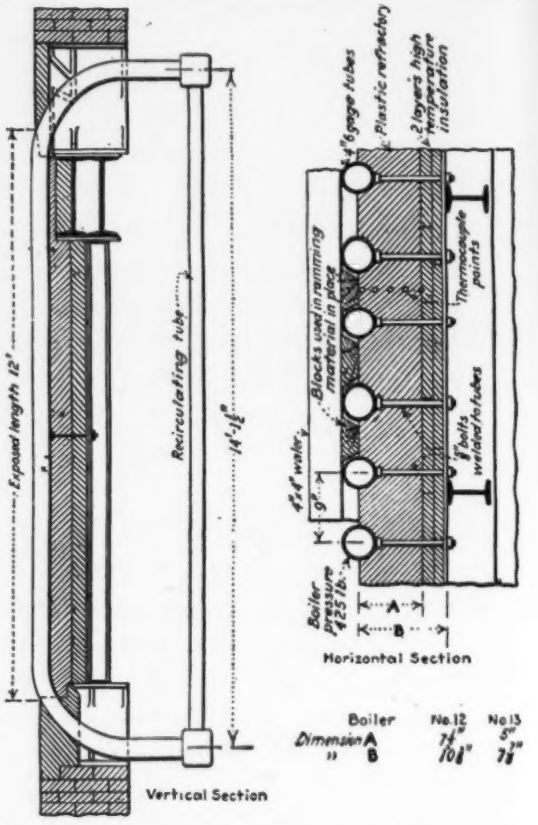
In such instances, as always in fact, it is quite essential that the refractory furnace linings be air-tight, in order that the cooling air may not be contaminated with gases and impurities from the combustion chamber. While, if the masonry work of the linings has been well laid and the bonding cement employed has been of suitable quality and texture the required tightness should be attained, coating the linings with a suitable plastic refractory, or cement, will serve to prolong the life of the furnace walls and insure their tightness. Of course, in the monolithic lining construction, where the inner furnace walls are built up of a plastic refractory which sets and forms a jointless firebox, the required tightness is pretty well assured as long as the lining stands up.

Much more could be said concerning monolithic refractory construction, forms and types of air-cooled furnace walls, etc., and volumes written expatiating on different kinds of refractory materials suitable for modernizing boiler installations, but it will be more in line with the aim of the present discussion to limit further remarks to a brief consideration of the water wall refinement which is so much to the fore at the present time. No attempt will be made to cover the subject thoroughly, but simply to cite an individual installation with the view of supplying some idea, at least, of the simplicity of one form of water wall construction, the effectiveness of the construction and its adaptability, at small outlay.

Low Cost Water Wall Construction

The installation in question is on the Pacific coast and consists of the water wall construction developed to serve two 1,526-horsepower boilers fired on gas or oil fuel. With gas fires, the boilers are operated at about 240 per cent. of rating and with oil fires at some 300 per cent. of rating. After six months of continuous operation on oil, the flame temperatures reaching over 2,900 degrees Fahrenheit, a careful inspection of the water walls showed no indication of any deterioration. The walls cost complete, incidentally, only some $7.00 per square foot.

These boilers were new and replaced others having furnaces of the solid refractory type which had given considerable trouble in the way of boiler outage and had imposed a considerable burden in refractory maintenance. The furnace wall temperatures of up to 2,920 degrees which were attained at 250 per cent. of boiler rating caused even the highest-grade refractories to melt down, particularly at the bottom of the high walls where the compression load was quite substantial. To afford desired protection to the new units, by means of proper cooling of the furnace lining walls, the bare tube variety of water wall construction was adopted.

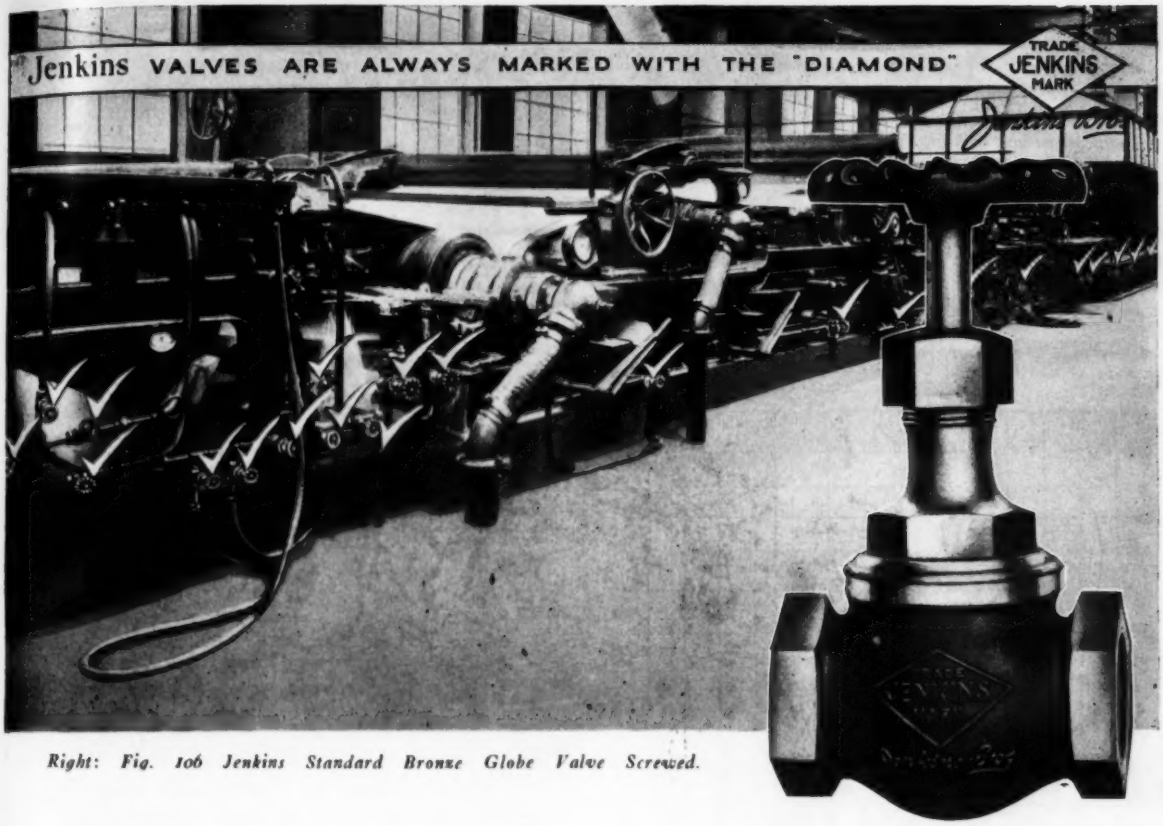


Courtesy: Plibrico Jointless Firebrick Co.

FIG. 1
Sections through water walls. 1,526 hp. boiler.

The water tubes in this type of refractory lining are exposed directly to the heat of the combustion chamber, being embodied only partly in the refractory walls. This is a quite permissible and highly satisfactory construction, for the bare, protecting water tubes are not subjected to anywhere as hard service as the first row of boiler tubes. The latter are called upon to withstand convection as well as radiant heat, while the sidewall tubes have to conduct radiant heat only.

The construction of the walls, which is shown diagrammatically in the accompanying illustrations, is extremely simple and obviously inexpensive. The steel plate casing of the boiler is lined with two layers of high-temperature insulation, with staggered joints, and the refractory material in plastic consistency is forced into place between such insulating lining and the plane of the exposed length of the water tubes to form a dense monolithic wall without joints. The water tubes, the water in which is under the boiler pressure of 425 pounds, are 4-inch, No. 6 gauge, set on 9-



Right: Fig. 106 Jenkins Standard Bronze Globe Valve Screwed.

On the Fourdriniers that make Deerfield glassine

The Jenkins Bronze Globe Valves shown above are serving a Fourdrinier machine in use at the plant of the Deerfield Glassine Co., Monroe Bridge, Mass. This company reports that the valves are "entirely satisfactory."

This type of machine is one of many paper mill applications of Jenkins Valves. Jenkins are installed on beaters and digesters as well as power plants, plumbing, heating and fire protection systems.

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A recent folder describes and illustrates the principal types of Jenkins bronze and iron body valves. Let us send you a copy; form 100 is the one to ask for.

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VALVES
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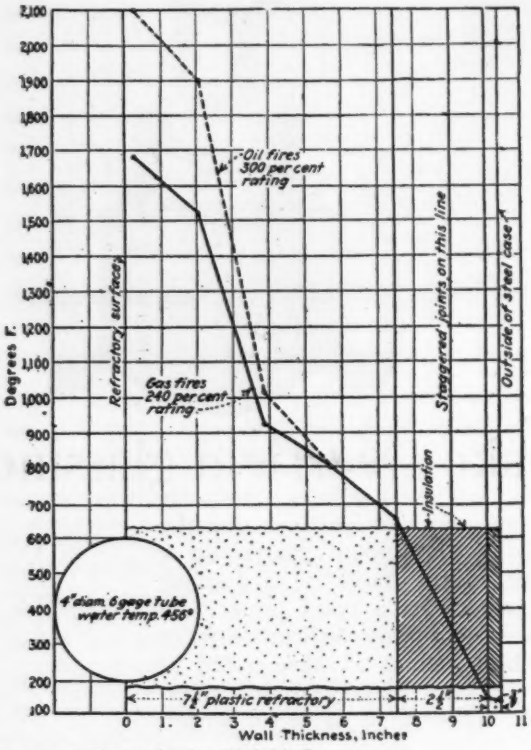
inch centers and are tied to the refractory walls by single bolts attached to the tubes at the centers of their exposed length, the bolts passing through the refractory, insulation and steel boiler casing. Such bolts, which are not drawn up tight, simply serve to hold the refractory in place, making it impossible for the lining to work loose and fall into the furnace.

The water in the tubes attains a temperature of about 456 degrees Fahrenheit and effectiveness of the water walls in controlling the temperatures of the refractory walls is quite strikingly depicted on the temperature gradient chart recording critical temperatures at various depths in the walls when firing on gas at 240 per cent of rating and also with oil fires at 300 per cent of boiler rating. When burning oil at 300 per cent rating, the flame temperature in the firebox reaches 2,940 degrees at the center of the furnace and about 2,800 degrees at the wing burners, the latter burners being installed far enough from the exposed tubes


Degrees F.
Oil fires 300 per cent rating
Refractory surface
Gas fires 240 per cent rating
Staggered joints on this line
Outside of steel case
4" diam. 6 gage tube water temp. 456°
7½" plastic refractory
2½"
Wall Thickness, Inches

Courtesy: Plibrico Jointless Firebrick Co.

FIG. 2

Temperature gradients through boiler walls. 1,526 hp. boiler.

in the side walls, about 48 inches, to guard against the possible impingement of oil spray on the bare water tubes. This is to protect the tubes against possible overheating and damage.

With such thermal conditions pertaining in the firebox, the maximum surface temperature of the refractory, near the burners and between adjacent water tubes, was 2,445 degrees. Just under the refractory skin, ¼ inch back from the hot surface, the temperature in the case of the oil fires was 2,100 degrees (see temperature gradient chart) and when gas fires are used, driving the boilers at 240 per cent of rating, about 1,680 degrees Fahrenheit.

The temperature gradient chart also records the temperatures existing at critical points in the refractory wall, and on either surface of the high-temperature insulation next to the steel casing of the boiler. With a firebox temperature close to 3,000 degrees, the temperature of the steel boiler casing is not much more than 100 degrees. Furthermore, the heat stored in the water circulating through the water walls is conserved by being returned to the boiler. The heat losses are almost negligible, the firebox temperature intense and still the refractory lining is subjected to no very harmful thermal action, its surface being effectively cooled well below any destructive temperature.

The itemized material and labor costs per boiler for converting a standard boiler battery into a unit in line with the latest developments in advanced boiler practice, as exemplified by the equipment now placed so generally in the more progressive pulp and paper mill power plants and in a good many of the more prominent of the public utility stations, follow. The unit cost, $7.00 per square foot of wall area, appears most attractive and should bring the modernizing of the power plant in respect to furnishing the boilers with efficient and highly economical water walls for combustion chamber linings well within the means of many mills which have not as yet gone into the matter.

There are, of course, other types of water walls which can well

DETAILED COSTS OF WATER WALLS

Water Wall Costs (per boiler)	1,526 Hp.
Material	
Large drums	$713.00
Water walls (bare, erected)	1,400.00
Plastic refractory	468.63
Sheet insulation	108.28
Mineral wool	17.25
Welding supplies	34.15
Miscellaneous	4.95
Entrance tile	197.54
Cast iron inlet boxes	640.00
Steel frame and casing	241.11
Lumber for forms	100.67
	$3,925.58
Labor	
Steelwork	$160.58
Forms (up)	44.90
Forms (down)	10.31
Placing refractory	155.30
Placing rock wool	28.25
Total Labor	$399.34
Summary	
Material	$3,925.58
Labor	399.34
Total	$4,324.92
Wall area, square feet	616
Cost per square foot	$7.03

Courtesy: Plibrico Jointless Firebrick Company.

be employed, numerous systems of air cooling which can be adopted to advantage, and much more which could be said about refractories in general and their specific applications, but the few remarks which have been advanced are simply intended to point out an opportunity for reducing power and steam costs through attention to the oft neglected furnace linings of boilers. No heavy investment need be involved and still in very many instances suitable refractory protection of furnace walls will increase the capacity of the boiler plant by several hundred per cent and at the same time sharply cut the maintenance burden. An opportunity of this character is certainly well worth investigating.

Asks $80,000 for Death at Crystal Tissue Mill

DAYTON, Ohio, April 16, 1929.—Damages amounting to $80,000 are asked in a suit filed the past week in the Butler county common pleas court by Mrs. Sallie Smith for the death of her husband, Lloyd H. Smith of Dayton, who was electrocuted at the plant of the Crystal Tissue Mills at Amanda, Ohio, February 13. Smith was an iron-worker.

The suit was brought against the Crystal Tissue Company, the Union Gas and Electric Company and the Caldwell and Iseminger Company of Middletown.

Smith was working on the construction of a new addition to the Crystal mills, being engaged on the steel frame work. Caldwell & Iseminger had the contract for the addition, and Smith was employed by the Structural Steel Company, a sub-contractor.

According to the petition, the wires of the Union Gas and Electric Company were strung close to the steel skeleton and carried 4400 volts. In rising from a stooping position, Smith is said to have come in contact with a wire and thrown 25 feet to the ground and instantly killed.

In her petition, Mrs. Smith said her husband was earning more than $3,000 a year, or $60 weekly.

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PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

For the Month Ending February 28, and for the Two Months Ending February 28, 1929 as Compared with Corresponding Months of Previous Year

IMPORTS—PAPER

		February				Two Months Ending February 28			
		1928		1929		1928		1929	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Paper and Manufactures (total	.....	.....	$12,761,193	.....	$11,550,497	.....	$25,778,530	.....	$25,161,811
Printing paper—									
Standard newsprint	lbs...free	345,192,093	11,307,522	330,661,052	10,197,438	700,807,473	22,954,223	724,425,492	22,345,057
Imported from—									
Finland	lbs.	7,697,474	219,413	3,877,452	97,671	11,937,886	337,430	10,075,400	254,522
Germany	lbs.	2,009,060	51,874	827,385	21,656	3,155,729	84,925	2,376,675	60,054
Norway	lbs.	1,770,991	41,529	2,490,625	63,816	2,076,975	49,740	2,878,356	74,120
Sweden	lbs.	10,255,125	277,467	8,748,064	224,878	21,517,302	576,732	16,385,053	425,479
Canada	lbs.	318,980,102	10,573,888	303,442,643	9,466,906	634,747,050	21,020,521	655,288,168	20,480,860
Newfoundland and Labrador	lbs.	4,187,730	135,971	11,274,883	322,511	26,862,548	870,197	37,421,840	1,050,022
Other countries	lbs.	291,611	7,380	.....	.....	509,983	14,678	.....	.....
All other n.e.s.	lbs...dut.	917,697	44,184	384,626	19,399	1,587,399	74,102	750,815	35,243
Grease-proof and water-proof papers	lbs...dut.	68,288	15,337	57,440	14,289	119,874	24,390	228,535	45,819
Kraft wrapping paper	lbs...dut.	534,492	22,058	557,261	22,929	1,102,603	46,293	1,424,167	59,480
Other wrapping paper	lbs...dut.	2,410,729	51,916	595,941	22,250	3,301,389	72,054	1,076,834	34,165
Writing, letter, drawing, etc., papers	lbs...dut.	162,742	43,094	253,508	56,683	322,323	83,142	514,874	125,913
Surface-coated paper	lbs...dut.	244,356	100,204	181,238	81,235	382,469	171,647	405,920	175,923
Tissue, copying, etc., papers	lbs...dut.	256,198	157,248	289,705	159,801	547,692	336,815	616,865	316,395
Paper boards, n. e. s.—									
Pulp boards in rolls	lbs...dut.	4,488,899	97,776	4,920,297	114,426	8,281,738	183,634	9,540,209	222,584
Paper boards, pulp board, and card-board	lbs...dut.	2,877,821	52,631	1,924,429	46,251	5,223,253	110,993	3,765,447	87,841
Leather board, test, and wall board	lbs...dut.	146,477	3,800	208,808	8,286	178,310	5,136	371,558	14,424
Cigarette paper, cigarette books, and covers	lbs...dut.	939,800	261,619	774,036	291,253	2,280,117	632,686	1,686,508	586,601
Hanging paper (wall paper)	lbs...dut.	341,153	80,181	308,787	75,743	550,660	131,822	619,595	154,097
Duplex decalcomania paper, not printed	lbs...free	66,695	15,853	77,165	18,443	113,657	26,699	124,001	28,911
Paper boxes	lbs...dut.	.....	135,540	.....	120,915	.....	282,747	.....	241,948
Pulp or papier-maché and manufactures, n. e. s.	lbs...dut.	.....	81,363	.....	57,864	.....	135,419	.....	173,024
All other paper and manufactures	lbs...dut.	.....	290,867	.....	243,292	.....	506,728	.....	514,386

WOOD PULP

Mechanically ground wood pulp	tons..free	18,885	488,850	12,704	349,968	37,821	935,515	35,768	934,827
Sulphite wood pulp	tons..free	86,003	4,957,387	79,685	4,701,429	188,248	10,892,650	186,089	10,931,541
Unbleached	tons..free	57,738	2,857,743	54,665	2,805,077	136,701	7,003,958	128,696	6,646,821
Bleached	tons..free	28,265	2,099,644	25,020	1,896,352	51,547	3,888,692	57,393	4,284,720
Imported from—									
Finland	tons	12,178	456,706	7,442	361,286	19,792	814,228	17,500	855,188
Germany	tons	5,105	350,272	5,728	387,953	8,456	594,087	13,662	914,242
Norway	tons	8,117	569,450	4,551	293,829	11,721	813,603	9,061	577,077
Sweden	tons	31,178	1,692,393	36,652	2,018,079	87,609	4,754,840	87,267	4,865,807
Canada	tons	26,325	1,724,421	24,120	1,571,700	52,976	3,475,905	54,749	3,497,456
Other countries	tons	3,100	164,145	1,192	68,582	7,694	439,987	3,850	221,771
Sulphate wood pulp, unbleached, (kraft pulp)	tons..free	27,414	1,526,846	23,893	1,327,910	63,433	3,521,180	51,094	2,829,855
Imported from—									
Finland	tons	2,354	102,120	2,815	138,801	2,354	102,120	5,116	253,516
Norway	tons	924	44,544	1,400	77,640	1,728	86,405	2,025	111,233
Sweden	tons	12,490	636,028	9,295	476,517	37,506	1,943,121	23,672	1,227,031
Canada	tons	11,548	740,162	9,948	612,954	21,649	1,380,948	18,819	1,169,331
Other countries	tons	98	3,992	435	21,998	196	8,586	1,462	68,744
Sulphate wood pulp, bleached	tons..free	2,315	128,047	1,669	115,690	3,483	205,649	2,524	185,092
Other pulp	tons..free	425	31,249	330	24,300	1,387	100,083	906	66,387

CRUDE PAPER STOCK

Rags for paper stock	lbs...free	31,850,737	631,339	29,790,757	582,814	69,482,105	1,312,879	66,455,140	1,254,575
Waste bagging, waste paper, etc.	lbs...free	8,934,491	114,682	10,102,187	118,920	16,870,927	223,735	22,607,741	271,196
Old rope and all other paper stock	lbs...free	3,138,915	102,633	4,166,586	198,057	9,068,095	232,449	11,007,318	437,052

CHEMICALS AND OTHER PAPER MAKERS MATERIALS

Colors, dyes, stains, color acids, and color bases, n. e. s.	lbs...dut.	598,793	$602,830	613,635	$688,124	1,002,242	$1,095,809	1,164,910	$1,305,772
Imported from—									
Belgium	lbs.	7,012	7,767	2,810	3,144	15,717	17,474	4,542	5,436
France	lbs.	12,863	18,480	17,927	25,932	25,932	28,074	21,453	30,510
Germany	lbs.	394,899	375,659	428,051	462,956	579,321	583,070	795,536	868,021
Italy	lbs.	6,728	4,876	1,100	870	19,089	15,019	1,980	2,104
Switzerland	lbs.	157,568	179,590	148,209	180,092	289,432	356,303	313,913	372,480
United Kingdom	lbs.	11,945	9,456	3,788	4,751	16,106	14,305	11,802	12,625
Other countries	lbs.	7,778	7,002	11,750	10,379	62,208	81,564	15,684	14,596
Casein or lactarene	lbs...dut.	2,203,080	304,850	2,981,751	338,996	5,435,568	767,904	5,920,127	674,939
Kaolin, china, and paper clay	tons...dut.	17,341	172,961	12,402	135,047	36,387	353,517	34,095	367,122

(Continued on page 64)

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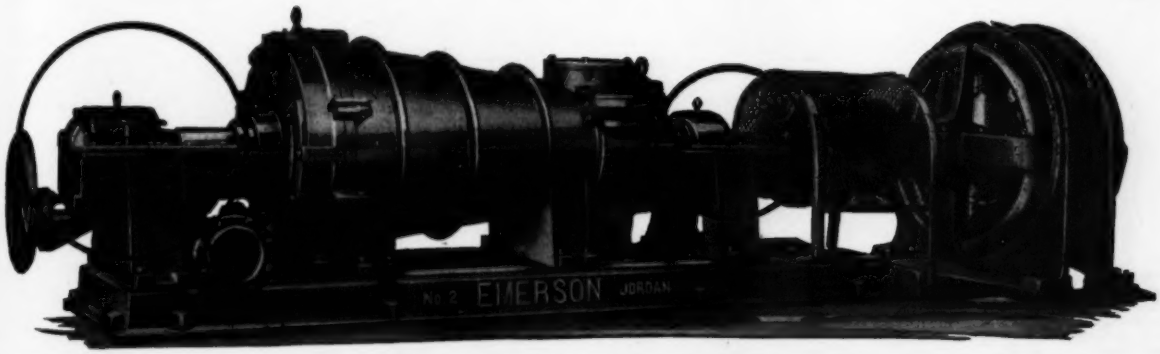
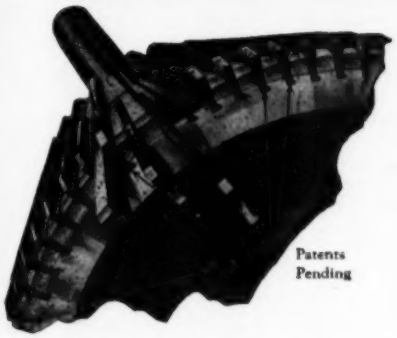
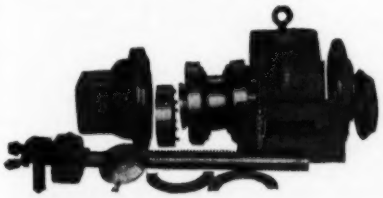




Patents Pending

Showing construction of the Bolton Bandless Plug. Knives and woods cannot come out. *NOTE INVERTED EDGES.*



Detail of Timken end bearing which takes care of both radial and thrust.

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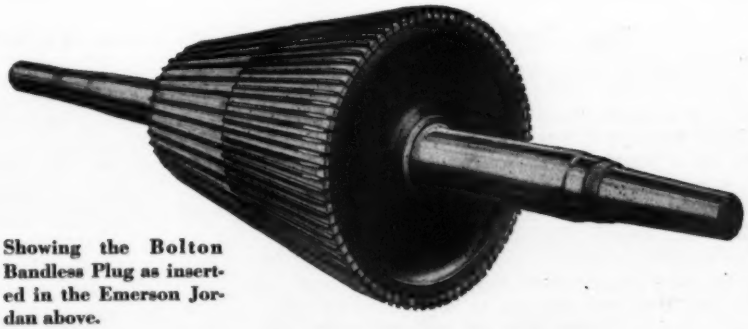

Showing the Bolton Bandless Plug as inserted in the Emerson Jordan above.

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DIVISION OF JOHN W. BOLTON & SONS, Inc.

2683

PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

(*Continued from page 62*)

EXPORTS—PAPER

	February				Two Months Ending February 28			
	1928		1929		1928		1929	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Paper and Manufacture (total	.....	$2,387,926	.....	$3,225,410	.....	$4,811,236	.....	$6,747,983
Printing paper—								
Newsprint paper ....lbs.	1,035,654	39,304	3,542,884	4,037,120	4,037,120	163,063	6,948,244	248,286
Exported to—								
Canada ....lbs.	.....	.....	22,225	1,426	43,280	2,006	102,733	5,433
Central America ....lbs.	129,367	4,601	84,825	3,548	186,723	6,764	242,485	9,043
Cuba ....lbs.	94,520	3,598	187,051	6,224	533,822	23,194	540,227	18,782
South America ....lbs.	306,246	10,929	1,522,186	53,637	716,943	27,269	2,389,324	84,284
China, Hong Kong, and Kwantung....lbs.	.....	.....	682,923	23,636	83,369	3,364	1,169,543	39,880
Philippine Islands ....lbs.	457,734	17,878	851,614	29,494	2,356,211	95,029	2,253,662	81,116
Other countries ....lbs.	47,787	2,298	192,060	7,576	116,772	5,437	250,270	9,748
Book paper, not coated ....lbs.	1,747,823	129,926	2,631,804	207,985	3,573,951	274,517	7,481,178	526,927
Exported to—								
Europe ....lbs.	82,913	6,149	362,315	26,603	106,303	8,363	617,778	45,980
Canada ....lbs.	433,701	29,873	883,427	50,238	995,122	68,354	2,205,685	126,892
Mexico ....lbs.	42,492	4,435	58,344	6,451	90,311	9,687	95,565	10,364
Cuba ....lbs.	244,440	18,032	367,249	28,063	554,149	41,630	649,086	47,403
Argentina ....lbs.	.....	.....	350,270	34,913	54,863	7,102	638,252	56,647
Other South America ....lbs.	85,336	6,730	125,645	12,642	236,261	19,389	271,934	25,100
China, Hong Kong, and Kwantung ..lbs.	568,141	39,556	25,207	1,920	794,997	55,682	1,835,525	110,697
Philippine Islands ....lbs.	65,203	4,952	172,520	12,589	247,433	17,246	640,401	42,291
Australia ....lbs.	51,675	5,423	167,290	24,307	160,008	17,760	260,704	38,002
Other countries ....lbs.	173,922	14,776	119,537	10,259	334,504	29,304	266,248	23,551
Cover paper ....lbs.	139,619	25,051	143,301	24,848	306,004	50,895	348,418	62,414
Grease-proof and water-proof paper ....lbs.	219,834	27,169	367,047	59,096	425,797	58,239	645,284	101,885
Overissue newspapers ....lbs.	.....	.....	8,853,152	101,705	.....	.....	21,526,454	251,711
Wrapping paper ....lbs.	3,402,924	269,865	3,744,244	246,883	7,149,197	539,472	7,771,270	542,258
Surface-coated paper ....lbs.	682,286	74,765	2,220,523	199,792	996,137	120,472	4,024,868	370,267
Tissue and crêpe paper ....lbs.	389,516	88,957	325,898	65,330	789,925	181,260	776,664	167,107
Toilet paper ....lbs.	348,084	39,846	728,938	83,451	720,138	83,868	1,261,425	143,314
Paper towels and napkins ....lbs.	256,331	31,680	183,371	24,824	441,613	57,168	477,955	61,505
Box board ....lbs.	4,021,167	124,227	5,117,391	134,038	7,902,806	244,997	10,803,748	280,661
Bristols and bristol board ....lbs.	202,744	14,283	185,233	20,005	306,844	25,823	472,103	45,704
Other paper board and strawboard ....lbs.	2,550,696	135,025	3,723,307	160,343	5,994,093	297,970	6,923,422	319,160
Sheathing and building paper ....lbs.	759,488	29,281	2,070,841	77,325	1,906,108	72,215	3,651,973	135,229
Fiber insulating lath or board ....sq. ft.	.....	.....	1,539,200	50,729	.....	.....	2,114,277	74,534
Wall board or paper or pulp ....sq. ft.	3,511,946	123,617	3,822,122	129,853	6,620,334	227,944	10,182,472	319,919
Blotting paper ....lbs.	399,199	49,895	233,386	29,222	675,514	82,669	631,455	75,053
Filing folders, index cards, and other office forms ....lbs.	118,977	38,917	155,672	51,164	196,476	72,192	284,265	105,636
Papeteries (fancy writing paper) ....lbs.	43,245	9,828	65,312	13,173	146,941	23,663	105,281	24,556
Other writing paper ....lbs.	1,528,752	205,235	2,480,668	273,500	3,180,774	408,467	5,658,356	599,858
Paper hangings (wall paper) ....yds.	5,668,603	102,050	6,024,511	114,014	10,109,050	173,180	9,871,765	182,194
Paper bags ....lbs.	727,445	64,558	790,024	72,589	1,411,045	125,180	1,860,386	162,211
Boxes and cartons ....lbs.	1,923,193	137,786	2,380,445	148,573	3,973,241	284,754	4,761,192	307,884
Envelopes ....lbs.	177,125	29,058	174,209	30,153	364,134	61,327	328,345	58,010
Vulcanized fiber sheets, strips, rods, and tubes lbs.	333,050	99,732	580,344	145,309	711,410	206,042	1,156,602	291,875
Manufacturers of vulcanized and indurated fiber ....lbs.	39,095	15,346	20,412	5,739	55,880	21,723	58,598	18,106
Cash-register and adding machine paper ....lbs.	152,752	16,263	228,044	25,710	367,167	39,277	823,409	79,611
Other paper and paper products ....lbs.	.....	466,262	.....	604,516	.....	914,859	.....	1,192,108
WOOD PULP AND PAPER STOCK								
Sulphite wood pulp ....tons	189	16,830	4,015	215,239	2,127	116,194	7,874	406,901
Soda wood pulp ....tons	98	7,940	226	18,273	398	33,209	348	28,304
Other wood pulp ....tons	48	3,025	441	40,306	196	11,258	850	74,563
Rags and other paper stock ....lbs.	14,597,339	215,516	10,517,073	210,075	34,975,692	634,418	21,820,239	393,362
PAPER AND PULP MILL MACHINERY								
Paper and pulp mill machinery ....lbs.	.....	392,626	.....	175,844	.....	688,420	.....	461,175

Paper from Artichoke Tops

The Paper Laboratory of the Bureau of Standards, Washington, D. C., has recently made tests to determine the paper making quality of artichoke tops. Since considerable of this material is available, the tests to determine its value as a paper making material are of practical value, experts of the laboratory say.

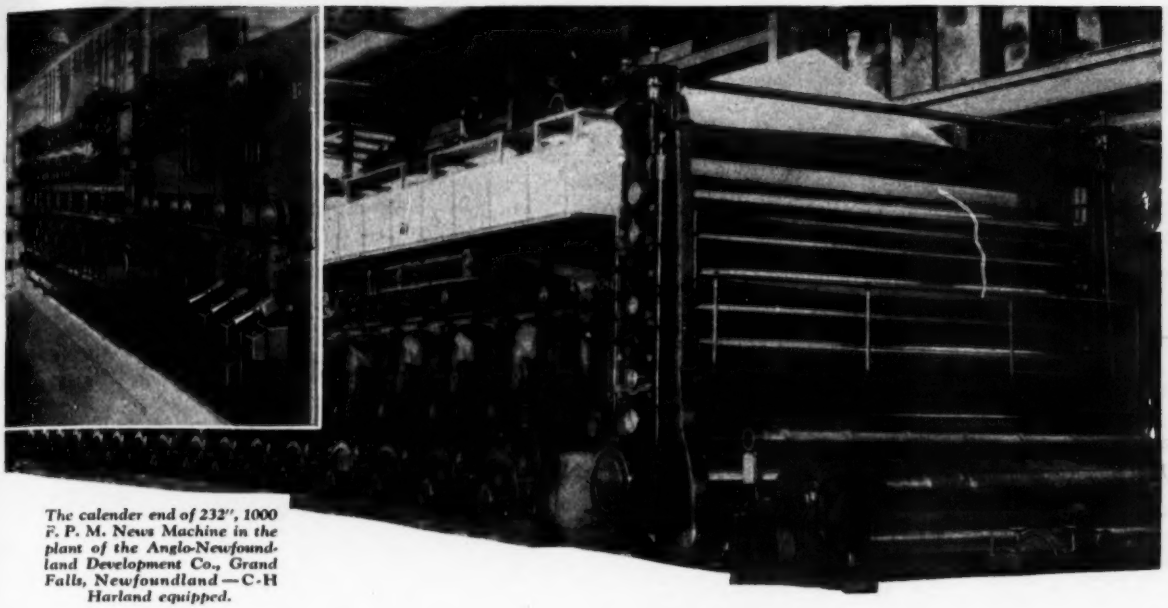
A microscopic examination revealed that the fibrous portion of the material consists of true fibers having an average length of 0.905 mm., pitted cells, 0.325 mm., and pith cells only 0.114 mm.

Two pounds of the material were cooked with 25 per cent caustic and the yield of unbleached pulp was 26.7 per cent. The fibers were very short and appeared to be unsuited for paper making except as a filler. A bleaching test indicated that the fiber can be bleached, but to produce a white pulp either a comparatively large amount of bleach would be required or a stronger solution be used in cooking. Either would reduce the yield. Some test sheets prepared from the unbleached fibers and weighing 56.7 pounds (basis, 25x40—500), had a bursting strength of 21 points.

To Review Mohawk Papermakers Case

[FROM OUR REGULAR CORRESPONDENT]

GREEN ISLAND, N. Y., April 22, 1929.—The Ford Motor Company has been granted a review by the United States Supreme Court of its case with the Mohawk Papermakers, Inc., of Cohoes, regarding the use of flashboards on the Hudson River power dam. The New York State courts recently rendered a verdict in favor of the paper company and ordered the removal of the flashboards near the Ford plant. Erection of the boards on the main spillway of the dam was protested by the Mohawk Papermakers which contended the obstructions decreased the flow of water available to its mills and factories. The Mohawk Company was successful in the lower courts in its argument that a license from the Federal Power Commission, under which the Fords built the flashboards, merely conferred privilege and did not make the motor manufacturers agents of the government. Through use of the board which extend several feet above the dam the Ford application said reserve of water would be created during the night when the entire flow was not required.



The calender end of 232", 1000 F. P. M. News Machine in the plant of the Anglo-Newfoundland Development Co., Grand Falls, Newfoundland — C-H Harland equipped.

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Other marked advantages of C-H (Harland) Drive are economy of space, simplicity of installation and low maintenance costs. Salable paper is often produced the first day stock is put on the wire.

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(8643)

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VOLUME V REVISED

As stated by Mr. J. N. Stephenson, the editor of the series, "It is not often that the revision of a book entails such complete overhauling as has been given to Volume V of the Manufacture of Pulp and Paper, which has just been issued by the McGraw-Hill Book Company, New York. The entire subject of paper machines is now handled in this volume while the section on general mill equipment has been transferred to Volume IV, which has also been revised."

Two new subjects appear—The Generation and Use of Steam, and Paper Making Details. The latter deals with the methods of preparation, materials used and the finishing of many grades of paper and board and will meet a real need.

As in the case of the other volumes, the authors of the various sections of Volume V were expert in the handling of their subjects and through the medium of this book, have made a worthwhile contribution to the technical literature of the pulp and paper industry.

Volume V contains 732 pages of interesting and valuable manufacturing data. The price is $6.00. It may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry, 18 East 41st street, New York, N. Y.

TO STUDY STREAM POLLUTION

A method of manufacturing wood pulp that will increase the yields, decrease the wastes, and give a product of as high quality as that obtained by present chemical processes and that will at the same time practically eliminate stream contamination was outlined as a possibility by Mr. C. C. Heritage of the Forest Products Laboratory at the forest research conference at Madison, Wis., recently. Mr. Heritage, who is in charge of the laboratory's studies in pulp and paper manufactuure, stated that the new investigation which is expected to save money for the paper mills and clean the rivers, creeks, and streams for the public will get under way at once.

The investigation to be undertaken will attempt to find a chemical process for making pulp that will produce a good paper and that will also permit recovery of substantially all the chemicals in the effluent.

Congress has appropriated $10,000 specifically for this research. The first possibility to be investigated is a method employing a soda-lime base to fit the sulphite process (which contaminates the waterway) permitting a recovery of the effluent something like that of the old soda process. The new, combined process is still in the early experimental stage and the research will attempt to make it a commercial actuality.

In commenting upon this research to the government engineers and scientists attenting the conference, Mr. Heritage said, "Increased utilization of mill waste effluent is not only reducing the waste of good timber, but in addition is stopping the pollution of our streams. The mills save money and the public benefits, which gives a profit all around. If we can devise a soda process for resinous woods, to replace the processes now necessary, the mill man can use jack pine and other inexpensive woods and the fisherman can still have his fish, and the general public can have clean waterways."

FOREIGN PAPER TRADE

Exports of paper and paper products from the United States during February show a slight decrease as compared with the previous month, and a considerable increase over February a year ago, according to the Paper Division of the Department of Commerce.

Consignments of news print paper showed a small increase over the previous month and a substantial increase over February, 1928. Shipments of wrapping paper decreased to some extent under January, 1929, and increased slightly as compared with February a year ago. Exports of writing paper show a considerable decrease in comparison with the previous month and a substantial increase over the corresponding month a year ago. Paper bag shipments for February show 790,024 pounds as compared with 727,445 pounds in February, 1928, and 1,070,362 pounds in January, 1929. Shipments of book paper decreased considerably under January, and increased about 883,981 pounds over February of the previous year. Exports of box board showed a slight decrease in comparison with the previous month and an increase of 1,096,224 pounds over the corresponding month a year ago. Other paper board and straw board exports increased to some extent over both January, 1929, and February a year ago. Exports of boxes and cartons were about on a level with January.

Among the minor paper exports, shipments of tissue and crepe paper show a decrease in comparison with both the previous month and the corresponding month a year ago. Shipments of papeteries, surface-coated paper, and toilet paper, exceeded both those of the preceding month and of the corresponding month in 1928. Exports of towels and napkins showed a tendency to fall off as compared with the previous month, and February, 1928.

Total shipments of paper and paper products during February were valued at $3,225,410, as against $3,522,573 in January, and $2,387,926 in February, 1928.

In addition to paper and board, $492,256 worth of paper base stocks were exported during February.

Imports of paper and paper products into the United States during February registered a decrease of 2,060,641 pounds as compared with the previous month and a decrease of 1,210,696 pounds under February a year ago.

Imports of standard news print showed a slight decline under

both the previous month and February a year ago. Imports of wrapping papers showed a decline as compared with both January, 1929, and February a year ago. Tissue paper imports decreased as compared with the previous month and showed a gain over February, 1928. Imports of other paper and paper products showed a decrease in value of $27,709 as compared with January, 1929, and a decrease of $47,575 under February, 1928.

Total paper and board imports during February were valued at $11,550,497, of which $10,197,438 represented 330,661,052 pounds of news print and $243,292 other paper and board receipts.

Statistics covering receipts of paper base stocks in comparison with January figures show a considerable increase in the volume of pulpwood receipts and decreased to some extent in the receipts of old rope and all other stock, and waste bagging, waste paper, etc. Rags for paper stock show a considerable decrease under the preceding month. Incoming shipments of wood pulp show a tonnage of 118,281 as compared with 158,100 tons in January, 1929, and 135,042 tons in February, 1928. The total value of paper base stocks during February is given as $8,621,927, as against $10,252,314 in January, 1929, and $9,578,204 in February, 1928.

Brotherhood Adjusts Differences at Hudson Falls

ALBANY, N. Y., April 20, 1929.—A temporary adjustment of grievances between the Union Bag and Paper Corporation of Hudson Falls and the papermakers' union at that place has been effected through the efforts of Frank P. Barry, vice president of the International Brotherhood of Papermakers, who returned to this city yesterday after having spent a week in the Hudson Falls territory. It is said that the company discharged 15 men but through the efforts of Mr. Barry 12 have been taken back. Whether or not the others will be able to be placed in their old jobs is a question which will be threshed out at considerable length when the representatives of the various unions associated with the papermaking industry meet with the officials of the Union Bag and Paper Corporation preliminary to the signing of the new wage and working agreements.

William R. Smith, president of the international organization, and Frank P. Barry are spending several days in Watertown holding conferences with officials of the St. Regis Paper Company. Mr. Smith said that there was no trouble between employees and employers in the Watertown section. The Brotherhood representatives called upon Corwin T. Jewell, general manager of the St. Regis Company, and it was said that there will be no changes in the agreements of the union men with the company, no objections or demands having been filed by either party prior to April 1 as agreed. Without objections the agreement automatically continues for another year.

Conferences were also held during the week with mill officials at Thorold, Ont., and North Tonawanda, N. Y., where the signing of wage and working agreements was reported satisfactory to both sides. The Northern New York District Council of the International Body held a meeting during the past week with Frank P. Barry presiding. Officers of the council elected for the year include Walter Warner, of Raymondville, president; Ernest Lambton, of Gouverneur, first vice president; Leslie Murtaugh, Deferiet, secretary, and Kyler Paul, Norfolk, treasurer.

At the close of the meeting held in the St. Lawrence Inn, Gouverneur, covers were laid for 88 members. All of the locals in the Northern New York district were represented and the principal speakers were W. R. Smith, president of the international body; J. P. Burke, of Fort Edward, president of the Pulp and Sulphite Workers' Union; Jacob Stebbins, of Fulton, organizer for the Pulp and Sulphite Workers; John Flynn, of New York, president of the Carpenters' Union; William Magin, of Glens Falls, president of the Stationary Firemen's Union.

Engineer's Service Appreciated

That the service of C. M. Baker, engineer of the American Pulp and Paper Association, is appreciated is evidenced by the following excerpts from a letter addressed to Major O. M. Porter, secretary of the association, by C. H. Burrows, president of the Mohawk Valley Paper Company, Inc., Little Falls, N. Y.:

"I am taking this opportunity to write a note of appreciation of the services rendered here by C. M. Baker who has been with us for the past two weeks in connection with our problems of eliminating white water waste, stream pollution and all that goes with it.

"This communication is in no way relative to a complete report, which I assume Mr. Baker will render and make use of later on for the benefit of the Association, or such members as it may concern.

"It is sufficient to say, however, this man has been of real value to us—in fact, to such an extent that we would be willing to pay a retainer fee for the services rendered. This man has come here, taken off his coat, gotten into the swill and worked with us to a point where we have gotten somewhere and where we believe his services will amply repay us for the time and effort spent on this white water proposition, and we want to say to you, as members of the Association, and as stated before, that we feel his services are invaluable and we are willing to stand back of same to any reasonable extent.

"The writer believes that a man of Mr. Baker's type should be made available for the trade along the line that he is working —possibly a steam and power expert, a high class chemist, etc., who could come into our plants when in need of such survices."

The officers of the association have been considering the development of a waste utilization and stream improvement service under Mr. Baker's direction, as suggested by this communication, and have been prevented from doing so only because of the Association's limited income. It is evident, however, that if the value of Mr. Baker's service can be sold to others as effectively as it has been to the Mohawk Valley Paper Company, there will be no question as to the establishment of this valuable service to the paper industry.

News Print Investigation Starts

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 24, 1929.—Actual work was begun last week at the Federal Trade Commission on the news print investigation as called for by the resolution of Senator Schall of Minnesota.

At this time only two men have been assigned to the survey, A. H. Tackett, who will have direct charge of the investigation. and J. A. Mullally. It is believed that about six men, including the two named, will complete the staff for the survey at this time. The others will shortly be named. It is expected at the Commission that this report will be ready for the Senate when it meets next December. At this time no hearings are contemplated. Mr. Tackett and Mr. Mullally at the present time are collecting all information available on the subject in this city before starting any field work.

Old Colony Envelope Co. To Build

[FROM OUR REGULAR CORRESPONDENT]

WESTFIELD, MASS. April 23, 1929—Details of the fine new four story additions to the Old Colony Envelope Company plant were announced this past week. On the south side and office building, 44 x 66 feet will be erected and on the north side a manufacturing building, 76 x 200 feet. The front of the present building will be altered to correspond in architecture to the additions.

Sales in 1929 so far are understood to have shown a 48 per cent increase over last year, and for the past 12 months two shifts have been in operation.

Envelopes, envelope linings, greeting card specialties, stationery, cut cards and novelties for advertising comprise the output of the concern.

Events of 1909

Roosevelt leaves for Africa

Over 20 Years Ago E B G Pioneered in the Manufacture of Liquid Chlorine

THE name of Theodore Roosevelt, twenty-sixth president of the United States, always will stand for the dynamic spirit that conquers every obstacle to progress.

The year that he relinquished office, and set sail for Africa, was signalized by another conquest, this time in the industrial field. It was the introduction of Liquid Chlorine for bleaching. To E B G went this honor of first liquefying Chlorine Gas in the United States.

The first pound of Liquid Chlorine produced in the U. S. A. 1907

The striking advantages of Liquid Chlorine have been broadened by the scientific manner in which E B G has conducted its manufacture, distribution, and assisted in its efficient use.

Strict excellence is maintained by expert technical control, by large and modern production facilities. These constitute real advantages for E B G customers.

Liquid Chlorine

Electro Bleaching Gas Co.

PIONEER MANUFACTURERS of LIQUID CHLORINE

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MAIN OFFICE:
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New York

Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Edited by
RONALD G. MACDONALD, Secretary

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

Treating Panels of Window Envelopes or Similar Transparent Material. C. E. Swett assignor to United States Envelope Co. U. S. pat. 1,656,303, Jan. 17, 1928. Cream of tartar is deposited on the surface by double decomposition of alcoholic solution of potassium acetate and tartaric acid to reduce glare from the surface.—A. P.-C.

Abrasive Sheet. C. E. Behr assignor to National Lead Co. U. S. pat. 1,645,037, Oct. 11, 1927. A sheet such as paper is impregnated with cottonseed oil or other suitable waterproofing agent and the abrasive grit is held to the sheet by a separately applied and different material which is miscible with the impregnating medium, e.g., a mixture of tung oil, linseed oil, rosin and gasoline.—A. P.-C.

Treating Paper to Render It Impermeable and Washable, etc. L. R. Mecre. Eng. Pat. 275,617, Aug. 4, 1926. Paper is first treated with a solution containing a mixture of at least two of the substances: alum, orchid flour (*farine d'orchi*), gum tragacanth, alga gum and resin; and is subsequently treated with borax, ammonium sulphate, ammonium carbonate, boric acid, or other reagent to render the material first applied insoluble. Coloring substances may be added and the paper may be preliminarily treated with an alkaline solution.—A. P.-C.

Waterproofed Paper. J. Reid assignor to Scutan Co U. S. pat. 1,667,691, Apr. 24, 1928. In forming material suitable for waterproof bags the surface layer of paper is infused with bituminous material having a melting point above 120 degrees C., by passing it through a bath of the molten material repeatedly and while the latter cools until viscous; the sheet is removed before it is completely saturated with the bituminous material.—A. P.-C.

Heat-Sensitive Paper for Recording Telegraph and Like Apparatus. R. H. Ranger. Eng. pat. 276,020, Aug. 14, 1926. A heat-sensitive material for marking a hot gas jet, electric spark, or other heating means, preferably comprises a short-fiber paper impregnated with a substance which changes its appearance when heated, e.g., (a) a solution formed of water 100, gelatin 10, salt 5, and phenolphthalein 0.5 parts, or (b) aniline hydrochloride 9.8 grams, water 99 cc., and potassium nitrate 8 grams, or other oxidizing agents, or, (c) water 100 cc., nickel nitrate 5 grams, sodium thiosulphate 3.9 grams, and sodium nitrate (1 per cent gelatin solution) 5 cc.—A. P.-C.

Manufacture of Paper Which Possesses Properties Closely Resembling Those of Handmade Paper. C. Moes. Eng. pat. 282,620, May 30, 1927. A continuous web of paper is made on the substantially uninterrupted surface provided by a number of separate wirecloth covered suction boxes mounted on a moving endless belt. The suction boxes and couch roll are given a lateral shake as a whole, relative displacements of the boxes during the formation of the sheet being prevented. The finished web shows weak cross zones, and when torn at these points a "deckle edge" effect is obtained.—A. P.-C.

Artificial Lumber and Process of Making Same. R. C. Q. Casanovas, F. Schwartz and E. Gil-Camporro. U. S. pat. 1,656,169, Jan. 17, 1928. Synthetic wood is prepared by applying to sheets of vegetable fiber a coat of a watery solution of a complex soap of resins and fatty acids of certain oils saponified with ammonia, leaving these sheets of vegetable fiber to dry in order to eliminate the water and ammonia, and then assembling them and subjecting them to pressure and heat—A. P.-C.

Cap Insulator and Material and Process for Manufacturing. L. G. Lange. U. S. pat. 1,657, 802, Jan. 31, 1928. One side of a sheet of tough paper is coated with a water soluble gum and dried. The other side of the sheet is varnished and then dried. The gummed surface is then wetted with water and brought in contact with a porous padding sheet, and the two sheets are rolled together, and disks suitable for use as cap insulators are immediately punched therefrom.—A. P.-C.

Impregnation of Paper. Emil Weinheim. Eng. pat. 255,094. The impregnating material is allowed to penetrate into and dry upon the web while this is subject to a constant and uniform tension. Constancy of tension is ensured by mounting the pressure rolls or guides, and driving the winding rolls peripherally, thus compensating for differences in diameter of the winding up and the winding off rolls.—A. P.-C.

Reminiscences of a Scottish Paper Maker. World's Paper Tr. Rev. 89, 882-886 (March 16), 1066-1077 (March 30*, 1306-1310 (Apr. 20, 1928). An account of early experiences and incidents in various paper mills in Scotland and England since 1860.—A. P.-C.

Manufacture of Paper to be Preserved and Causes of Its Deterioration. E. Arnould. Papier 31, 431-436 (Apr. 1928). A general discussion of the precautions which must be taken in

the manufacture of paper which is to be preserved for a long time.—A. P.-C.

Expriences of an Envelope Manufacturer With Paper. James J. Shea. Paper Mill 51, No. 22, 14, 16 (June 2, 1928); Paper Trade J. 86, No. 23, 86-87 (June 7, 1928). The essential qualities which a suitable sheet for use in making envelopes should have are: proper moisture content (preferably about 7 per cent); proper sizing; long-fibered, evenly and not too rapidly dried on the paper machine; even thickness throughout the sheet. The troubles caused by the paper failing to possess these characteristics are briefly discussed.—A. P.-C.

Utilization of Paper for Printing. F. Eymond. Papier 31, 159-175 (Feb.), 269-85 (March 1928). An address describing the chief printing processes, with a view to initiating the paper maker to the requirements of the printer.—A. P.-C.

Problems of the Printer With Paper. O. W. Fuhrmann. Paper Mill 51, No. 22, 46-52 (June 2, 1928); Paper Trade J. 86, No. 23, 88-90 (June 7, 1928); Pulp and Paper Mag. Can. 26, 857-859 (June 21, 1928). An address dealing with the troubles encountered by printers with paper.—A. P. C.

Method and Mechanism for Making Tapered Shingles. A. L. Clapp assignor to Flintkote Co. U. S. pat. 1,643,373, Sept. 27, 1927. In order to obtain a stiff waterproof board, tapering similarly to ordinary wooden shingles, so as to avoid the drawbacks inherent to flexible roofing shingles, the cylinder mold is prevented from picking up pulp to be deposited on the felt over certain portions of its periphery, these portions varying in circumferential extent axially across the cylinder mold. This is done conveniently by using deckle strips or bands so as to cover those portions of the periphery of the cylinder mold on which it is not desired that the pulp be deposited.—A. P.-C.

Method of Flexing Abrasive Paper. J. P. Seymour assignor to Carborundum Co. U. S. pat. 1,647,475, Nov. 1, 1927. In order to increase the flexibility of abrasive paper, it is generally first passed over a flexing bar, cut into sheets, and then flexed by hand in a direction at right angles to the direction of flexing in the first operation. In accordance with the present invention the paper is flexed in two directions at right angles to each other in one operation by passing it around two flexing bars at an angle of 90 degrees to each other.—A. P.-C.

Coated Paper. L. G. Thomson assignor to Champion Coated Paper Co. U. S. pat. 1,655,745, Jan. 10, 1928. In order to obtain a dull finish coated paper, a solid shade of the color desired, using an oil base ink, is applied on to ordinary supercalendered book paper, which is then dried in a festoon drier. This does not affect the smoothness of the finish and does not develop any roughness or lack of uniformity of surface which would prevent it from taking fine halftone printing. The process is preferably applied to the paper directly as it comes from the supercalenders and before trimming, as the color coating cannot be applied right to the edge of the sheet.—A. P.-C.

Transparent-Paper Machine. E. M. Kratz assignor to Marsene Products Co. U. S. pat. 1,650,585, Nov. 22, 1927. The machine is for the production of thin sheets of transparent paper from gelatin composition or other suitable sheet material. A warm viscous gelatin solution is fed on to an endless carrier having a specially prepared surface, with which the feed roll does not come in contact. The viscous sheet thus formed is passed through a "jelling chamber," where it is cooled down very rapidly by means of cold brine and a blast of cold air, so that the sheet may set to a jelly even when the machine is run at high speeds. On leaving the "jellying chamber" it passes over a suction roll which is provided to draw the carrier belt through the machine, as pressure rolls would deform the gelatin sheet. The sheet is then passed on to a festoon drier on emerging from which it is separated from the carrier belt and wound into rolls. The adjustment of the gelatin solution feeding mechanism allows of producing a sheet of uniform thickness, varying less than 0.0001 inch across the width and length of the sheet.—A. P.-C.

Modified Sulphite Process. J. B. Beveridge. U. S. pat 1,649,942 (Nov. 22, 1927). Paper pulp is prepared by digesting particles of wood with a solution containing magnesium bisulphite together with an alkali sulphite and an alkali bisulphite.—A. P.-C.

Production of Pulp High in Alpha-Cellulose. G. A. Richter. Can. pat. 274,416 (Oct. 4, 1927). Raw cellulosic material is digested in an acid sulphite cooking liquor in which the free sulphur dioxide and combined sulphur dioxide are in approximately equal proportions of 3 to 4 per cent each, under conditions of high temperature and pressure. The resultant pulp is separated from the spent liquor and is treated at low temperature with a caustic soda solution containing a small proportion of bleaching agent. The treated pulp is washed free of its alkaline liquor and the entrained products of reaction, and is then bleached.—A. P.-C.

Use of Magnesia Instead of Lime in Sulphite Cooking. O. Hiller. Papier 31, 195-196 (Feb., 1928). After reviewing previous work on the advantages of magnesia base sulphite liquors, the author gives the results of laboratory experiments and of mill experience, from which he concludes that by replacing half of the lime by magnesia the cook can be carried out more rapidly and at higher temperature.—A. P.-C.

Pulping of Hardwoods and Mixtures of Hardwoods and Conifers by the Sulphite Process. W. H. Monsson. Paper Trade J. 86, No. 17, 59-62 (April 26, 1928); Pulp Paper Mag. Can. 26, 705-709 (May 24, 1928); Tech. Assoc. Papers XI, 121-124 (June, 1928). A study of the sulphite pulping of hardwoods both alone and in admixture with conifers showed that: (1) Aspen, maple, birch and black gum are readily reduced by the sulphite process giving high yields of bleachable pulp suitable for a number of grades of paper and paper board. (2) Mixtures of the above hardwoods with spruce or hemlock are as readily pulped as the hardwoods themselves giving good yields of bleachable pulps equal or superior in strength to pulps produced from the hardwoods alone. (3) A cooking acid of high free sulphur dioxide and a long impregnation period are desirable to insure thorough penetration of the chips by acid and uniform cooking. (4) Cooking schedules previously found suitable for spruce are equally good with only slight modification for the hardwoods and mixtures. (5) The advantage of good yields noted for hardwoods is enhanced by the greater weight of such species per cord.—A. P.-C.

Manufacture of Bleached Sulphite Pulp on the Pacific Coast of British Columbia. W. L. Ketchen. Pulp Paper Mag. Can. 26, 765-770 (June 7, 1928). A detailed description of the sulphite pulping process, from wood to finished products, with particular reference to conditions on the western coast of Canada. —A. P.-C.

Manufacture of High Alpha Cellulose. Joseph Rossman. Paper Trade J. 86, No. 15, 59-63 (Apr. 12, 1928); Tech. Assoc. Papers XI, 187-191 (June, 1928). A review of United States and foreign patents.—A. P.-C.

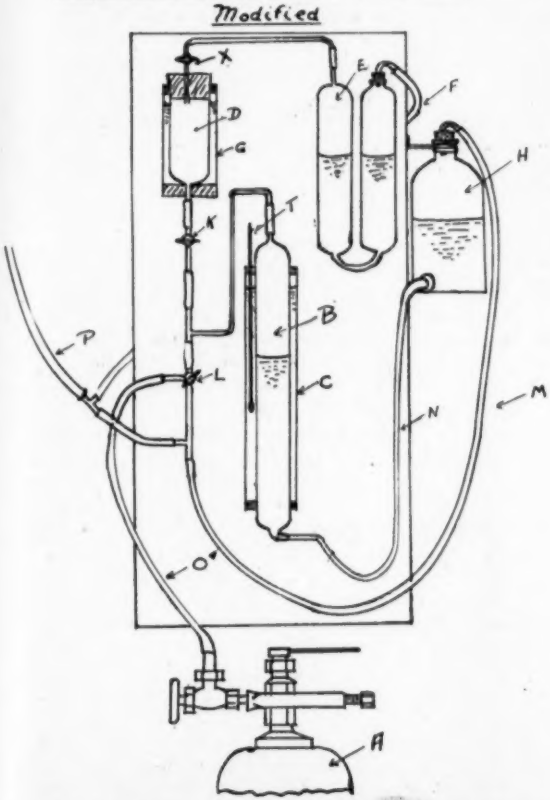
Process of Heat and Liquor Recovery in the Sulphite Pulping Process. T. L. Dunbar assignor to Stebbins Engineering & Manufacturing Co. U. S. pat. 1,646,084 (Oct. 18, 1927). About 50 per cent of the spent liquor is mixed with fresh cooking liquor, while the remainder is mixed with an alkaline solution and used for the preparation of sulphate cooking liquor. The mixed spent and fresh sulphite liquors are preheated and sent to surge tanks (one above each digester), connected to both the top and bottom of the digesters, from which the liquor flows by gravity into the digesters. After the digester has been brought up to normal cooking pressure, the steam is practically cut off, and the liquor is circulated by means of a pump through the digester and corresponding surge tank. As any desired stage fresh hot liquor under pressure can be pumped into the digester to increase the pressure but not the temperature, thus obtaining the benefits of high pressure, without the drawbacks of high temperature. The piping is so connected that the liquor can be circulated as desired either through the several digesters or surge tanks or back into the hot liquor tank or storage tanks.—A. P.-C.

Control and Evaluation of Sulphite Pulp Quality

By G. P. Genberg[1] and E. O. Houghton[2]

The value of technical control in pulp production has become increasingly apparent in recent years due to the growth of the industry, with the consequent need of manufacturing a uniform high quality product in order to ensure an outlet in the competitive market that exists to-day. The satisfactory production of a uniform high quality sulphite pulp is dependent on many variables, some of which are capable of accurate control while others can be controlled only to a certain extent. The first variable is met with in the raw material used, namely, the pulpwood. The variation in species itself has little effect on the uniformity of the pulp produced if sufficient care is taken to use one species alone or a uniform mixture at all times. Logs of the same species, however, even when grown in the same locality, vary considerably in pulp-forming qualities. A great deal depends on the conditions of growth such as light and air and a suitable soil; a tree grown under favourable conditions with plenty of light and moisture will be more suitable for pulp than one which has been crowded

Figure 1. Roe Chlorine Apparatus. Modified



and distorted during growth or affected by extreme atmospheric or unsuitable soil conditions. The time of seasoning and moisture content of the pulpwood also vary considerably but by allowing for this in the cooking treatment the effect of these variables can be partially compensated for.

The composition and strength of the cooking liquor, in this case a solution of calcium bisulphate containing excess sulphurous acid, has a great influence on the production of a uniform pulp and for this reason must be kept within certain definite limits. Any unavoidable slight variation in the cooking liquor can be usually equalized in the cooking procedure, the temperature and pressure of which can be accurately controlled to suit the existing conditions. For determining the finish of a cook quick methods must necessarily be used because of the rapid change in the properties of the pulp and liquor which occurs towards the end of the cook. In our case the colour of the liquor is compared with a predetermined standard and used in conjunction with the determination of the residual sulphurous acid by iodine titration to judge of the degree of digestion.

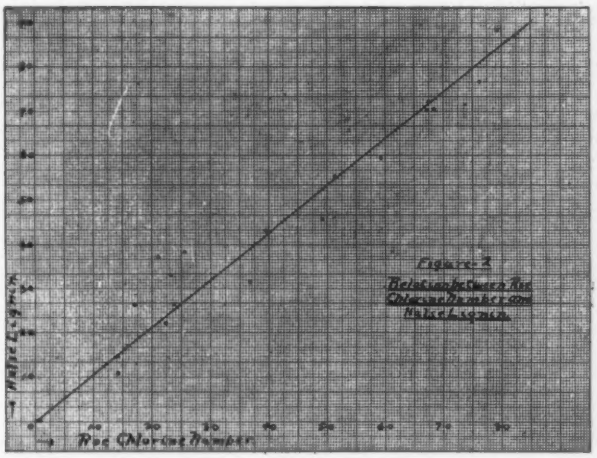


Figure 2

Technical control is essential in determining the purity of the fibers produced by the cooking process and in controlling the subsequent bleaching operation. It is also necessary in testing and grading the finished product. The strength properties of a pulp give an indication of its subsequent action in the beaters and refiners and on the paper machine as well as serving as a means of foretelling and regulating the quality of paper produced from it. In both these instances, that is for determining the purity of the fibers and the strength properties of the pulp, we use methods which were first advocated by R. B. Roe of the Paul A. Sorg Paper Company. In the first case the Roe chlorine number determination has been found to be by far the best and quickest method available; as a measure of the strength qualities we have found that the initial strength test, as further developed by the TAPPI Sulphite Committee, gives us all the information desired. These two methods and their application will be described in what follows and compared with the other methods in use, after which their relation to the various manufacturing steps will be discussed and the deductions possible brought out.

Purity of Fiber—Roe Chlorine Number

There are many methods of determining the purity of pulp fibers, most of which however are not applicable to mill use. In routine work the methods used depend upon the estimation of the amount of lignin in the pulp by allowing it to react with various chemical reagents under definite conditions. The method in use here was first suggested by R. B. Roe[3] in a paper presented to the American Chemical Society in April, 1924. It consists essentially in measuring the volume of chlorine gas absorbed by a sample of moist unbleached sulphite pulp under certain definite conditions, the result being expressed as the weight of chlorine

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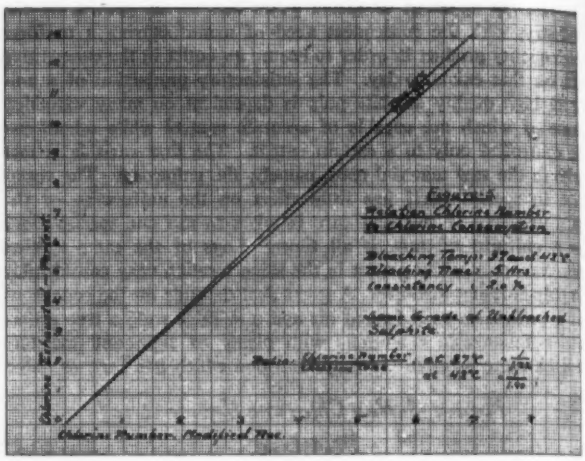
[2] E. O. Houghton, Chemist, Fraser Companies Limited.

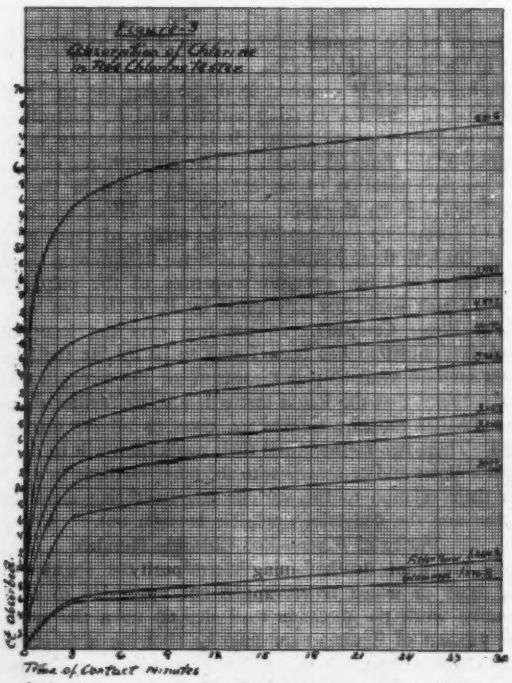
[3] Paper Trade Journal, October 9, 1924.

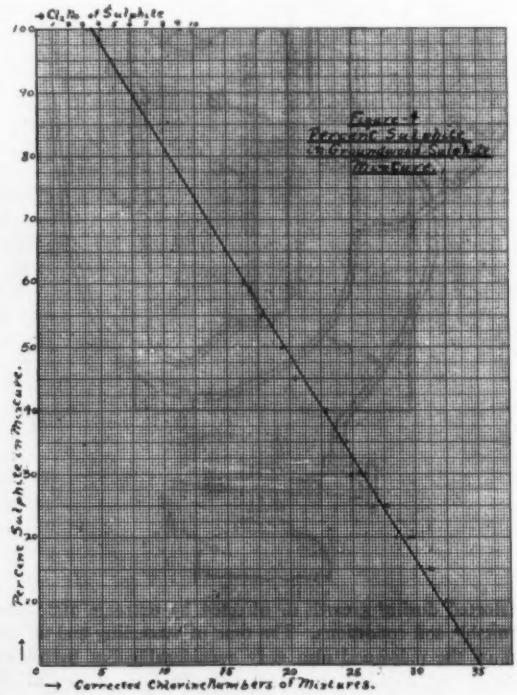
absorbed by 100 grammes of pulp and known as the chlorine number. Roe's original apparatus has been modified[4] slightly in order to make it suitable for routine tests in the pulp mill laboratory. The apparatus and procedure will be described again here to make what follows clearer.

The various parts of the tester are mounted on a vertical support as shown in Fig. 1. Capillary glass tubing is used throughout and by arranging the connections as shown a practically closed system is obtained thus preventing the contamination of the air in the laboratory with chlorine gas. In such an apparatus however gas leaks are always possible and it has been found advisable to have two testers and to carry out the determination in duplicate. The confining liquid is a solution of calcium chloride (30 gms. $CaCl_2$ per 100 cc. water) saturated with chlorine gas. The following procedure is used, the letters referring to Figure 1.

Two grams of air dry pulp in the form of thin sheets are weighted out and sufficient water added to bring the weight up to 4.5 gms. The sample is then opened up to expose a large surface and placed in the reaction chamber D, which is then stoppered. Stopcock X is now opened to relieve the pressure in D; bottle H is lowered, stopcock K opened and the liquid in E drawn up to the capillary tube at the top; X and K are then closed and the bottle returned to its hook. The three-way valve is turned to connect the chlorine cylinder with the burette B which is then filled with gas. This gas is driven out through L and P to the outside atmosphere by raising the bottle H; this procedure is repeated to make certain that all air has been displaced. The burette is then filled a third time, valve L closed and the volume of gas in B measured by levelling the liquid in B and H. The bottle is then hung up and K and X opened allowing the gas to come into contact with the sample in D. The pulp is exposed to the action of the chlorine for fifteen minutes. During this time the level in the two arms of E is kept the same, as is that in B and H, by varying the height of H. This keeps the different parts of the apparatus under the same pressure and lessens the possibility of any gas escaping. At the end of fifteen minutes the bottle is lowered until the liquid in E is again drawn up to the capillary tube, when X is closed. The new volume of gas in B is then measured leaving K open, after which the bottle is hung up, K closed and D uncovered. The sample is removed and the reaction chamber blown free of chlorine and is then ready for another determination. The whole determination takes about twenty minutes to carry out. The difference between the two volume readings gives the amount of chlorine absorbed by the pulp sample; this is corrected for temperature, converted into grams and expressed as a percentage of the pulp taken. The figure thus obtained must be corrected for the chlorine absorbed by the water in the sample. This is done by running a determination using pure filter paper instead of pulp and subtracting the value obtained from the uncorrected chlorine number. This "blank" determination needs to be checked only occassionally.







That the results obtained by this method are really indication of the purity of the fibers has been brought out in a previous investigation where it was definitely established that the chlorine numbers bears an almost direct relationship to the lignin content of the pulp. These results are given again in Table 1, and Fig. 2. The lignin was determined by Halse's method using Hydro-

[4] Genberg & Johnson, Paper Trade Journal 82, 22:50 (1926).

TABLE 1
RELATION BETWEEN ROE CHLORINE NUMBER AND HALSE LIGNIN

Sample Number	Corrected Chlorine Number	Per Cent Lignin
1	7.92	8.84
2	7.61	7.65
3	6.81	7.05
4	6.75	7.25
5	6.74	7.01
6	5.95	6.92
7	5.19	5.55
8	4.91	4.60
9	3.95	4.32
10	3.68	3.12
11	2.54	3.85
12	2.37	2.60
13	2.33	3.35
14	2.27	2.24
15	2.10	3.70
16	1.70	2.60
17	1.42	1.02
18	0.06	0.00

chloric and sulphuric acids, the procedure being modified slightly.

The absorption of chlorine in the Roe apparatus is of course dependent upon the amount of lignin in the sample to be tested. Investigation has shown however that, irrespective of the amount of lignin present, a uniform rate of absorption is reached within twelve to fifteen minutes after exposing the sample to the action of the chlorine gas. This is clearly demonstrated in Table 2, and Figure 3, where the results of a series of tests on pulps of varying lignin content are given.

The use of the Roe chlorine number as an indication of the lignin content of pulps has been further strengthened in a recent investigation concerning the determination of the relative amounts

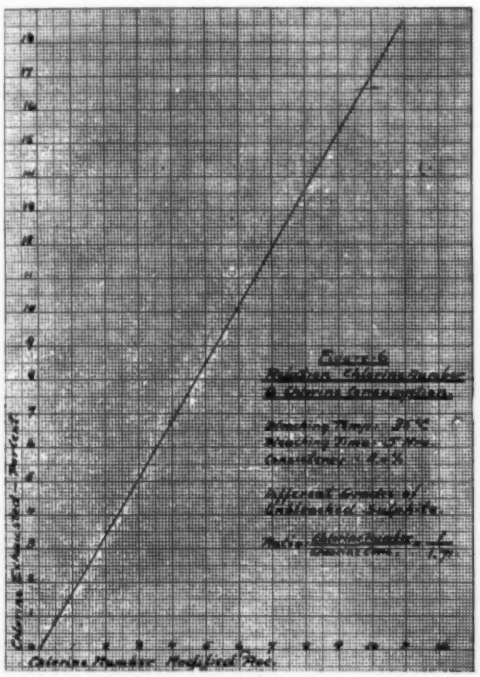


TABLE 2
RATE OF ABSORPTION OF CHLORINE IN ROE CHLORINE TESTER

Number of Sample	Chlorine Number	Time of Contact in Minutes 3	6	9	12	15	18	21	24	27	30	cc. absorbed last 15 min.
1	1.97	16.45	17.55	18.75	19.55	20.2	20.7	21.25	21.75	22.15	22.6	2.4
2	2.64	20.8	22.3	23.3	24.35	24.9	25.6	26.05	26.8	27.3	27.8	2.9
3	3.04	22.9	24.5	26.0	26.8	27.4	27.9	28.35	28.9	29.1	29.7	2.3
4	3.80	27.55	29.5	30.9	32.35	33.0	33.7	34.4	35.1	35.7	36.2	3.2
5	4.47	31.9	34.0	34.6	36.4	37.0	37.8	38.4	39.0	39.6	40.0	3.0
6	4.87	34.4	36.6	38.0	39.0	39.8	40.6	41.2	41.8	42.4	43.0	3.2
7	5.43	38.2	40.6	41.9	42.9	43.6	44.4	45.2	45.8	46.4	46.9	3.3
8	8.07	55.4	58.8	60.4	61.7	62.5	63.3	64.0	64.6	65.15	65.75	3.25
9	1.26	6.2	7.0	7.6	8.0	8.65	9.3	9.85	10.3	10.95	11.45	2.8
10	1.07	5.8	6.2	6.7	7.05	7.4	7.75	8.0	8.4	8.6	8.9	1.5

N. B.—Sample No. 9—Pure filter paper. Sample No. 10—Glass wool. Chlorine numbers in column 2 calculated from cc. absorbed at end of first 15 minutes in usual manner.

of sulphite and groundwood present in catalogue paper. The usual method used for estimating the relative proportions by weight of the two pulps is by microscopic analysis, which has the great disadvantage of being dependent on the personal factor. A further source of error occurs, as an allowance must be made to correct for the difference in weight between the fibers of sulphite and groundwood. The tendency is to place the sulphite percentage far too high due to the fact that both types of fibres have the same bulk under the microscope. The sulphite fiber however is practically pure cellulose and hence represents only about 50 per cent of the original wood fiber, which fact must be

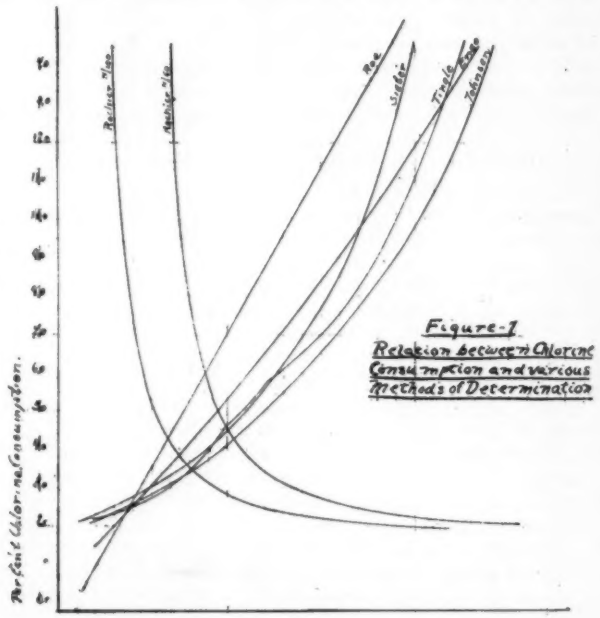


Figure-1
Relation between Chlorine Consumption and various Methods of Determination

taken into account when estimating the quantity present.[5] Chemical methods of analysis for such a determination have been advocated before but have not proved of much value in control work due to the time involved.[6]

Recently the need arose of determining the relative percentage of sulphite and groundwood used in the production of catalogue paper and it was found that microscopic analysis could not be used as an accurate check on the quantities used. In the search for a more reliable method the following experiments were carried out which resulted in the adoption of a method involving the Roe Chlorine Number determination.

It seemed probable that by determining the chlorine number of the sulphite—groundwood mixture by the usual procedure, that the proportion of sulphite present could be obtained with a fair degree of accuracy taking all factors into consideration. It is of course necessary to know the chlorine numbers, that is the lignin content, of both the groundwood and the sulphite as well as of the mixture. It is to be expected that the chlorine number of the groundwood itself should be practically constant, the only variable being the pulpwood used, and while the lignin content varies appreciably from stick to stick the average of all remains more or less fixed. This was confirmed by determining the chlorine numbers of samples of groundwood over a period of several days. The results are given in Table 3, and show that we are justified in assuming a constant value of 35.00 per cent for the chlorine number of groundwood.

This being definitely established a series of tests were carried out on varying mixtures of sulphite and groundwood, care being

[5] Pulp & Paper Magazine Can., Nov. 6, 1919.
[6] Halse, Papir J. 14, 121 (1926); also Paper Trade Journal, Dec. 2, 1926.

TABLE 3
CORRECTED CHLORINE NUMBER OF GROUNDWOOD

Number	Chlorine Number	Deviation from mean
1	35.00	0.09
2	35.17	0.26
3	34.44	— 0.47
4	34.37	— 0.54
5	34.04	— 0.87
6	34.53	— 0.38
7	34.87	— 0.04
8	34.55	— 0.36
9	35.35	0.44
10	35.67	0.76
11	36.03	1.12
Average	34.91	

taken to lose none of the fine particles of groundwood when preparing the sheets for the chlorine tester. The results of these tests are given in Table 4, the unbleached sulphite used having a chlorine number of 3.51 per cent. The values for the percentage of sulphite calculated from the chlorine numbers of the mixtures, using 3.51 per cent for the sulphite and 35.0 per cent for the groundwood, are also given. These of course correspond with the values obtained from the curve in Fig. 4, joining 3.51 on the sulphite

TABLE 4
CHLORINE NUMBERS OF SULPHITE—GROUNDWOOD MIXTURES

Number	Per cent Sulphite	Per cent Size	Per cent Alum	Per cent Clay	Corr. Cl_2 No.	Calc. per cent Sulphite	Deviation
1	5	..	..	..	33.14	5.9	+0.9
2	10	..	..	..	32.35	8.4	—1.6
3	15	..	..	..	31.32	11.7	—3.3
20	15	..	..	..	30.20	15.2	+0.2
19	15	1.5	2.0	..	31.09	12.4	—2.6
4	20	..	..	..	29.87	16.3	—3.7
24	20	..	..	..	28.40	20.9	+0.9
25	20	1.5	2.0	..	29.22	18.3	—1.7
26	20	..	..	10	29.82	16.4	—3.6
5	25	..	..	..	27.93	22.5	—2.5
15	25	2.0	3.0	..	26.51	26.9	+1.9
16	25	..	..	..	27.70	23.2	—1.8
6	30	..	..	..	26.00	28.6	—1.4
21	30	..	..	..	24.99	31.8	+1.8
22	30	1.5	2.0	..	25.88	28.9	—1.1
23	30	..	..	10	25.46	30.1	+0.1
7	35	..	..	..	24.54	33.2	—1.8
8	40	..	..	..	22.83	38.6	—1.4
9	45	..	..	..	20.32	46.6	+1.6
10	50	..	..	..	19.39	49.6	—0.4
11	55	..	..	..	17.75	54.8	—0.2
12	60	..	..	..	16.26	59.5	—0.5
13	65	..	..	..	13.95	66.8	+1.8
14	70	..	..	..	12.61	71.1	+1.1
18	80	..	..	..	7.99	85.8	+5.8
17	90	..	..	..	5.69	93.0	+3.0
27	100	..	..	..	3.51	100.0	....
28	100	1.5	2.0	..	4.08	98.3	—1.7
29	100	..	..	10	3.35	100.5	+0.5

scale with 35 on the groundwood. From the table it will be seen that in only one case, namely No. 18, is the deviation from the actual value over 3.7 per cent; in over 75 per cent of the cases the deviation is less than 2 per cent which is much closer than can be obtained by microscopic analysis.

The effect of size, alum and filler clay was also investigated. The results, included in Table 4, show that at least up to certain limits, the presence of these materials has no adverse effect on the determination. When the amount of filler is large however it is necessary to allow for this in weighing up the sheets prior to exposing to the chlorine gas.

The foregoing brings out the reliability and good degree of accuracy of the new method of analysis. By using a fixed value of 35.0 per cent as the chlorine number of groundwood and joining this point with the chlorine number for the unbleached sulphite on the upper scale, Figure 4, a straight line is obtained which, once the chlorine number of the unknown mixture has been determined, will give the percentage of sulphite present. One limiting feature of this method is the necessity of knowing beforehand the chlor-

TABLE 5
ACCURACY OF CHLORINE NUMBERS OF SAME GRADE OF UNBLEACHED SULPHITE PULP

Sample No.	Chlorine Number 1	2	3	4	5	6	Mean	Deviation from mean: Maximum Plus	%	Minimum Minus	%
1	1.99	2.01	2.07	2.01	2.06	2.09	2.04	0.05	2.5	0.05	2.5
2	2.78	2.61	2.60	2.43	2.60	2.53	2.59	0.19	7.3	0.16	6.2
3	2.79	2.61	2.93	2.79	2.88	2.89	2.82	0.07	2.5	0.21	7.4
4	3.06	3.07	3.06	3.00	3.03	2.97	3.03	0.04	1.3	0.06	2.0
5	3.43	3.43	3.47	3.49	3.39	3.34	3.43	0.06	1.7	0.09	2.6
6	3.84	3.78	3.65	3.65	3.73	3.71	3.73	0.11	2.9	0.08	2.1
7	4.26	4.29	4.23	4.17	4.29	4.32	4.26	0.06	1.4	0.09	2.1
8	4.58	4.58	4.42	4.46	4.51	4.55	4.52	0.06	1.3	0.10	2.2
9	5.24	5.18	5.15	5.18	5.18	5.18	5.19	0.05	1.0	0.04	0.8
10	6.71	6.75	6.70	6.80	6.48	6.61	6.68	0.12	1.8	0.20	3.0
							Average Deviation:	+ 2.4		— 3.1	

TABLE 6
ACCURACY OF CHLORINE NUMBER OF DIFFERENT GRADES OF UNBLEACHED SULPHITE PULP

Sample No.	Chlorine Number 1	2	3	4	5	6	Mean	Deviation from mean: Maximum Plus	%	Minimum Minus	%
1	5.07	5.07	4.92	4.94	....	....	5.00	0.07	1.4	0.08	1.6
2	1.96	1.87	1.64	1.53	1.67	1.58	1.71	0.25	14.7	0.16	9.4
3	6.17	6.05	6.38	6.34	6.41	....	6.27	0.14	2.2	0.22	3.5
4	4.88	4.91	4.63	4.67	4.45	4.56	4.68	0.23	4.9	0.23	4.9
5	4.88	4.98	4.88	4.95	....	....	4.92	0.06	1.2	0.04	0.8
6	4.55	4.66	4.80	4.74	4.59	4.50	4.64	0.16	3.5	0.16	3.5
7	6.78	6.84	6.64	6.75	....	....	6.75	0.09	1.3	0.11	1.6
8	5.21	5.14	5.09	5.12	....	....	5.14	0.07	1.4	0.05	1.0
9	9.57	9.45	9.68	9.42	....	....	9.53	0.15	1.6	0.11	1.1
10	1.83	1.72	1.66	1.63	....	....	1.71	0.16	7.0	0.08	4.7
							Average Deviation:	+ 3.9		— 3.2	

ine number of the unbleached sulphite stock. For this reason the method cannot be used on unknown samples but is only applicable to control methods in actual operation where the amount of lignin in the sulphite stock can be determined. The high value for the lignin content of the groundwood is undoubtedly caused by the removal of water soluble carbohydrates during the grinding operation thus increasing the percentage of lignin in the fibers.

The foregoing method of determining the purity of sulphite pulp, namely that advocated by Roe, compares very favourably with the other methods put forward from time to time. It has the great advantage of being rapid and simple in operation and at the same time capable of being checked by inexperienced operators. The degree of accuracy is shown in Tables 5 and 6; the former covers tests made on our own pulp having different chlorine numbers, while Table 6 gives the results of similar tests on different grades of unbleached sulphite pulps of, on the average, higher chlorine numbers than our own. These results show that the highest deviations from the average are on samples of low chlorine number. Our pulp usually has a chlorine number between 2.50 per cent and 4.50 per cent and in this range the deviation from the average is about ± 3 per cent at the most, which is sufficiently accurate for any routine test.

Most of the other methods such as Sieber's,[7] Enso's,[8] Bergmann's,[9] and those described by Schwalbe and Sieber[10] depend upon either allowing the sample to be acted upon by an excess of bleach liquor of standard strength and alkalinity for a definite period of time followed by a back titration of the excess bleach, or adding varying amounts of bleach to different samples and letting the reaction go to completion. Tingle's[11] method depends upon the action of bromine on the pulp, while the use of potassium permanganate has been advocated by Johnsen and Parsons,[12] Roschier,[13] and Björkman.[14] These methods all require the use of standard solutions and either take a fairly long time to carry out or depend on a colour change for the end-point both of which are undesirable. Table 7, gives some idea of the relation existing

TABLE 7
COMPARISON OF DIFFERENT METHODS TO DETERMINE THE DEGREE OF DELIGNIFICATION

Chlorine Consumption Ratio Roe 1.75:1.0	Roe Chlorine Number	Sieber Number 1-10 Scale	Tingle Chlorine Factor	Enso Chlorine Number	Rochier Permanganate Number N/100	Rochier Permanganate Number N/50	Bergmann Chlorine Number	Kauras Chlorine Consumption	Johnsen Permanganate Number N/50	Björkman Permanganate Number	Klason Lignin	Richter Lignin	Becker Lignin	Halse Lignin
2.10	1.2	2.0	1.06	2.55	85	128	2.95	2.85	5.4	61	0.50	0.73	3.0	1.3
2.45	1.4	2.5	1.36	2.70	63	87	3.45	3.25	6.3	63	0.85	0.98	4.7	1.5
2.98	1.7	3.0	1.62	2.95	48	69	3.87	3.80	7.3	68	1.20	1.23	6.1	1.8
3.58	2.1	3.5	1.78	3.25	39	57	4.27	4.20	8.3	73	1.50	1.48	7.3	2.2
4.55	2.6	4.0	1.95	3.65	33	50	4.70	4.60	9.5	79	1.80	1.73	8.4	2.8
5.78	3.3	4.5	2.28	4.20	29	45	5.08	5.00	10.7	88	2.15	1.98	9.5	3.6
7.00	4.0	5.0	2.60	4.65	26	42			11.9	93	2.45	2.23	10.6	4.3
8.75	5.0	5.5	2.94	5.35	24	39			13.3	103	2.80	2.48	11.7	5.4
11.20	6.4	6.0	3.26	6.25	21	37			14.7	115	3.20	2.73	12.7	6.9
14.88	8.5	6.5	3.58	7.40	19	35			16.2	130	3.60	2.98	13.8	9.2

[7] Paper, April 6, 1921.
[8] Pap. Fabr. 48, 1926.
[9] Papers u. Trav. Finland, 4, 1922.
[10] "Die Chemische Betriebskontrolle in der Zellstoff und Papier Industrie." 2nd ed., 1922, p. 210.
[11] J. E. I. C. 14, 40, 1922.

TABLE 8
BLEACHING TESTS OF THE SAME GRADE OF SULPHITE OF DIFFERENT CHLORINE NUMBER
10 gr. of pulp. Bleaching temp. 37 deg. C. Bleaching time 5 hours. Consistency 2.0 per cent

Chlorine Number	Chlorine added	Chlorine left	Chlorine exhausted	Per cent Chlorine added	Per cent Chlorine exhausted	Per cent Bleach exhausted	Ratio bleach: Chlorine number
2.04	.409	0.034	.375	4.09	3.75	10.73	1:5.26
2.82	.565	.044	.521	5.65	5.21	14.90	1:5.28
3.03	.607	.036	.571	6.07	5.71	16.33	1:5.41
3.43	.685	.083	.602	6.85	6.02	17.22	1:5.02
3.73	.746	.043	.703	7.46	7.03	20.11	1:5.39
4.26	.852	.051	.801	8.52	8.01	22.91	1:5.38
4.52	.906	.100	.806	9.06	8.06	23.05	1:5.09
5.19	1.038	.112	.926	10.38	9.26	26.48	1:5.10
6.68	1.337	.166	1.171	13.37	11.71	33.49	1:5.01
					Average ratio		1:5.22

between the various methods. These figures were obtained partly from work performed in our laboratory and partly from the sources mentioned above, being brought together to serve as a means of comparing one method with another.

Relation of Roe Chlorine Number to Bleach Consumption

One of the most advantageous points about the Roe chlorine number is that it gives a direct indication of the bleach consumption required by the pulp. By plotting the chlorine number against the bleach consumption a straight line is obtained and the chlorine number can be converted into bleach consumption by multiplying the former by a factor which is the same for all chlorine numbers when bleaching to a uniform high white. The factor itself depends on local conditions in different plants, such as the time and temperature of bleaching and the colour and cleanliness desired of the pulp. In our case the ratio necessary to give a full white stock is 1:5.5, that is, a pulp with a chlorine number of 3.00 per cent would require 16.5 per cent bleach.

Table 8 gives the results of a series of tests on our pulp of varying chlorine number. The bleaching in all instances was carried out at 2 per cent consistency and 37 deg. C. for a period of 5 hours, using a bleach liquor of uniform strength and alkalinity; similar tests were carried out at a temperature of 42 deg C. the results being shown in Table 9. In both these cases the chlorine number—bleach consumption relationship was given by a straight line as shown by Fig. 5. The ratio was constant in each series but increased slightly with an increase in temperature. Tests carried out on different grades of unbleached sulphite gave the same straight line relationship, the results of these experiments being given in Table 10 and Fig. 6. The pulps from the above tests were in every case of a high colour similar to that obtained in actual practice and all bleach tests were performed so as to duplicate mill conditions as much as possible, the consistency, however, being much lower.

All other methods devised for a rapid determination of bleach consumption do not bear this straight line relationship to the

TABLE 9
BLEACHING TESTS OF THE SAME GRADE OF UNBLEACHED SULPHITE OF DIFFERENT CHLORINE NUMBERS
10 gr. of pulp. Bleaching temp. 42 deg. C. Bleaching time 5 hours. Consistency 2.0 per cent

Chlorine Number	Chlorine added, gr.	Chlorine left, gr.	Chlorine exhausted, gr.	Per cent Chlorine added	Per cent Chlorine exhausted	Per cent Bleach exhausted	Ratio bleach: Chlorine number
2.59	.517	.024	.493	5.17	4.93	14.10	1:5.44
2.82	.565	.041	.524	5.65	5.24	14.99	1:5.32
3.03	.607	.028	.579	6.07	5.79	16.56	1:5.47
3.43	.687	.056	.631	6.87	6.31	18.05	1:5.26
3.73	.746	.052	.694	7.46	6.94	19.85	1:5.32
4.26	.849	.049	.809	8.49	8.09	23.14	1:5.43
4.52	.902	.015	.887	9.02	8.87	25.37	1:5.61
5.19	1.035	.055	.980	10.35	9.80	28.03	1:5.49
6.68	1.336	.036	1.300	13.36	13.00	37.18	1:5.57
					Average ratio		1:5.43

[12] P. T. J. 76, 49, 1923.
[13] P. & P. Mag. Can., Jan. 11, 1923.
[14] P. T. J., Nov. 3, 1927.

TABLE 10
BLEACHING TESTS OF DIFFERENT GRADES OF HARD UNBLEACHED SULPHITE
10 gr. of pulp. Bleaching temp. 35 deg. C. Bleaching time 5 hours. Consistency 2.0 per cent

Sample	Chlorine Number	Chlorine added	Chlorine left	Chlorine exhausted	Per cent Chlorine added	Per cent Chlorine exhausted	Per cent Bleach exhausted	Ratio bleach: Chlorine number
1	1.71	.342	.045	.297	3.42	2.97	8.49	1:4.96
1	4.64	.927	.119	.808	9.27	8.08	23.11	1:4.98
3	4.68	.935	.184	.751	9.35	7.51	21.48	1:4.59
4	4.92	.983	.119	.864	9.83	8.64	24.71	1:5.02
5	5.14	1.027	.182	.845	10.27	8.45	24.17	1:4.70
6	6.27	1.253	.186	1.067	12.53	10.67	30.52	1:4.87
7	6.75	1.344	.247	1.097	13.44	10.97	31.37	1:4.65
8	5.00	.999	.104	.895	9.99	8.95	25.60	1:5.12
9	9.53	1.907	.179	1.728	17.28	17.28	49.42	1:5.19
					Average ratio			1:4.90

actual amount of bleach required, as is shown in Fig. 7. This is due to the fact that most methods measure the amount of some oxidizing agent absorbed during a certain time, or the time required for the absorption of a definite amount of oxidising agent This will apparently result in a complete oxidation for a soft pulp and an incomplete for a hard pulp thus giving a curved relationship inaccurate for very soft and very hard pulps. Despite the fact that the time is a factor in the Roe method the reaction between the chlorine gas and the lignin in the pulp is complete even for groundwood pulp as has been shown.

This straight line relationship does not hold in actual practice however due to operating conditions in the mill. By plotting the numbers of inches of bleach against the chlorine number, Fig. 8, we obtain, not a straight line as in the bleaching tests but a curve showing a rapid increase in bleach for the lower chlorine numbers and then a continual diminishing rate of increase for the higher chlorine numbers. The bellmers are charged with a certain volume of stock and the weight of pulp in each batch is governed by the consistency of the stock itself, the volume of bleach required and the condensate from the steam used in heating the pulp. Now a pulp of high lignin content, that is high chlorine number, is known to be relatively slower than one of lower chlorine number; in other words it retains more water and the consistency of the bellmer stock is decreased below the usual point. Moreover, a pulp of higher chlorine number requires more bleach, and in order to finish the bleaching within the required time, a higher temperature is needed and consequently a larger volume of condensed steam results. Both these factors also tend to decrease the capacity per bellmer when bleaching pulps of high chlorine numbers and thus the actual bleach required is less than the calculated amount based on the laboratory tests.

A pulp of low chlorine number, on the other hand, being more free, is thicker in the bellmers and hence requires more bleach than is given by the straight line relationship. Here two further factors come into play, namely, the fact that a pulp of low chlorine number is usually acid, and also that the digestion of the chips is apt to be carried too far with consequent darkening of the cooking liquor and dyeing of the fibers by the dissolved organic matter present. Both these conditions require an excess of bleach to obtain a satisfactory colour. If the amount of bleach is corrected for consistency variations and the other factors are taken into consideration, the relationship approaches more nearly to the theoretical especially for the lower chlorine numbers as is shown in Fig. 8. Thus when all factors are considered a constant ratio of bleach to chlorine number is probably the correct condition to obtain a uniform average white.

This however is not the case when bleaching pulp to a low colour. A series of bleach tests were carried out and it was found that, using the same ratio of bleach to chlorine number, pulps of low chlorine numbers gave a much better colour than pulps of higher lignin content, the colour decreasing progressively as the chlorine numbers of the unbleached pulp increased. The results of these tests are given in Table 11, which shows that an

TABLE 11

Chlorine Number.	1.70%	3.22%	4.12%	5.37%	6.28%
Ratio	1:3.5	1:3.5	1:3.5	1:3.5	1:3.5
Per cent Bleach..	5.95%	11.30%	14.40%	18.80%	22.00%
Consistency	6%	6%	6%	6%	6%
Temperature	24° C.	24° C.	24–27° C.	24–27° C.	24° C.
Time	5 hr. 40 m.	4 hr. 30 m.	3 hr. 30 m.	3 hr.	4 hr. 40 m.
Cl_2 No. of residue	0.76%	0.87%	0.96%	1.01%	1.37%
Colour			Decreasing	75	

TABLE 12

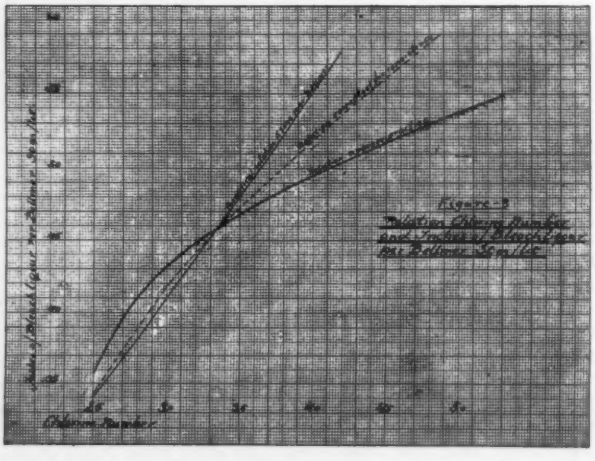
Chlorine Number.	1.70%	3.22%	4.12%	5.37%
Ratio	1:3.15	1:3.25	1:3.30	1:3.50
Per cent Bleach..	5.35%	10.45%	13.60%	18.80%
Consistency	6%	6%	6%	6%
Temperature	24° C.	24° C.	24° C.	24° C
Time	3 hr. 50 m.	3 hr. 25 m.	3 hr. 30 m.	3 hr. 15 m.
Cl_2 No. of residue	1.00%	1.02%	0.90%	0.97%
Colour	80	75	75	75

excess of bleach over that necessary to give 75 color was used for the pulps of lower chlorine numbers. In addition, the chlorine number of lignin content of the bleached pulps increases with increase in the chlorine number of the original unbleached pulp. If the pulps were all bleached to the same final colour the lignin remaining should be practically the same in all cases. A further series of tests, in which the bleach ratio was varied with the chlorine number of the pulp, gave the results shown in Table 12. The colour was the same in all cases except that of the lowest chlorine number (which sample was of Swedish manufacture, the remainder being our own pulp); the lignin remaining was nearly constant for all samples tested.

The variation of the bleach ratio with the chlorine number is given in Fig. 9. In an attempt to explain this variation when making a pulp of low colour the experiments described below were carried out.

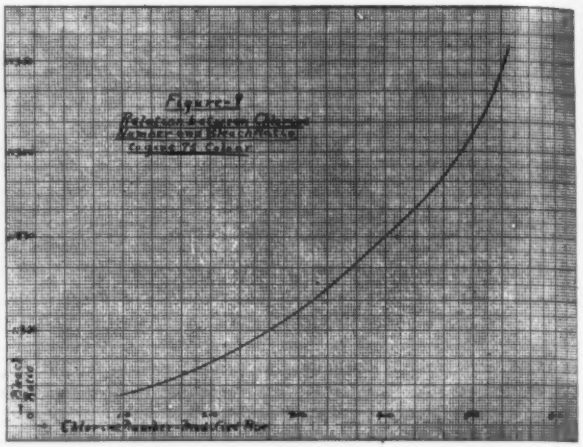
As a preliminary experiment samples of pulp of varying chlorine numbers were exposed to the action of chlorine gas in the Roe apparatus using the usual procedure for the determination of chlorine numbers. The chlorine numbers obtained were used in calculating the amount of bleach required in the subsequent experiments. After chlorination the pulp was disintegrated, washed thoroughly, and made up into sheets for color comparison. The variations in color are shown in Table 13; the colour decreases definitely as the chlorine numbers increase. This of course is

[18] cf. Rys. P. T. J., Jan. 3, 1929.



due to the larger amount of lignin present in the pulp of higher chlorine numbers and the consequent formation of larger quantity of coloured chlorinated products. One definite conclusion shown by these tests is that although a portion of the colored decomposition products was soluble in water, a large proportion could not be removed by washing but remained attached to the pulp fibers.[18]

In a second series of experiments the same pulps were subjected to the action of chlorine in the same ratio as before but under different conditions. Whereas in the first series the chlorine was present in the gaseous form, in these experiments the equivalent amount of chlorine was added in the form of calcium hypochlorite bleach solution, the ratio of chlorine number to bleach required thus being 1:2.87. The samples, two grams as before, were bleached at 21 deg. C. and the action carried to exhaustion to ensure the same amount of chlorine being used in both series, as well as to have a definite point at which to compare the colors of the different pulps. In these two series there was only enough chlorine added to combine with the lignin present and the second



reaction of bleaching, the oxidation of the colored products, cannot occur to any great extent. This accounts for the definite decrease in color observed, for with increase in the chlorine numbers of the pulps more coloured products are formed and they remain in the pulp. These results verify the previous work of bleaching to 75 colour, namely that to obtain a uniform low colour an increasing ratio is needed as the chlorine numbers increase.

The large difference in the final shade of colour produced by these two series is due to the different conditions involved. In the presence of acid, chlorine forms a reddish compound with lignin; this is what occurs in the first series, due to the presence of hydrochloric acid formed by the action of chlorine on the moist pulp. Ordinary bleach liquor of course is alkaline and the product formed under such conditions, between lignin and chlorine gas, is a pale yellow and not reddish.

Two further series of tests were performed, bleaching samples of the same pulps at bleach ratios of 1:3.50 and 1:4.50, the color resulting being included in Table 13. From this it will be seen that the samples bleached at 1:3.50 ratio still show a slight variation in colour as the chlorine numbers increase, while those bleached at the higher ratio all have the same colour, a full white. The table also shows that for each chlorine number the color becomes better as the ratio increases. Beyond a certain point overbleaching would occur with weakening of the fibers and no further improvement in color.

Bleaching may be considered as taking place in two main stages; first a reaction between the hypochlorite in the bleach liquors and the lignin in the pulp, (whether this is a chlorination or an oxidation or both, is still a matter for dispute); second, the oxidation of the colored products formed to produce soluble

TABLE 13
COLOR CHANGES WITH CHLORINE NUMBER AND BLEACH RATIO

Chlorine Number of sample	Chlorinated	Bleached at 1:2.87	Bleached at 1:3.50	Bleached at 1:4.50
2.26%	45	77	..	90
2.48%	37	75	86	90
2.85%	29	71	84	90
3.37%	20	67	82	90
3.88%	12	62	80	90
4.70%	0	54	77	90

N. B.—These numbers have no actual significance, being purely arbitrary in order to show the relative-changes in colour under the varying conditions, there being no means at hand for photographing the colour sheets.

colorless compounds. There are two minor reactions of the bleach liquor, namely the oxidation of any coloured organic impurities present and, if the bleaching is carried too far, an attack on the cellulose fibers themselves. Considering the two main reactions it seems plausible to assume that at a certain definite ratio there should be just enough bleach present to combine with the lignin and to oxidize the products formed giving a uniform white pulp. Since the chlorine number is directly comparable to the lignin content of the pulp, this ratio should be constant for all chlorine numbers.

The above assumption may at first seem incompatible with the results obtained when bleaching to 75 colour where an increasing ratio was found to be necessary to obtain a uniform colour. If a constant ratio is used the color decreases as the chlorine numbers increase, as the preceding experiments show. However a point in favor of the above assumption is that as the ratio is increased the colour difference with varying chlorine numbers becomes less. This is clearly shown in the experiments conducted at ratios of 1:2.87 and 1:3.50. In the former there is a much greater difference in colour between the pulps of chlorine number 2.48 per cent and 4.76 per cent than there is between the same two pulps when bleached at a ratio of 1:3.50.

A necessary condition for the acceptance of this assumption is that the increase in colour with increasing ratio would have to be less at the lower chlorine numbers than at the higher. A glance at Table 13 shows that this is actually the case; there is undoubtedly a larger difference in colour between the sample of chlorin number 4.76 per cent when bleached at ratios of 1:2:87 and 1:3.50, than there is between the sample of chlorine number 2.48 per cent when bleached under the same conditions. Such being the case all pulps, regardless of lignin content, might conceivably reach a uniform average white at the same ratio. Below this certain ratio an increasing ratio with increasing chlorine number would be necessary to obtain a uniform (low) colour. Of course, even if the above did not hold, the color of all pulps would eventually become the same at a constant ratio due to the effect of overbleaching, since beyond a certain point no improvement in color occurs.

All the foregoing investigations and results tend to show the value of the Roe chlorine number as a means of determining the purity of pulp fibers, and as an aid in controlling the bleach requirements in actual operation. Its usefulness in other directions is brought out by the newly described method of determining the relative quantities of sulphite and mechanical pulps present in a mixture of the two.

Strength Testing of Pulp

The strength testing of pulp is a subject concerning which there has been much discussion, the buying and selling of sulphite pulp being based largely on the strength properties of the product. The method of testing, however, still varies in practically every mill despite recent efforts to standardize the test for universal use. The procedures used depend to a certain extent on the ultimate use to which the pulp is to be put, but they are all alike in that the pulp is disintegrated, made into test sheets, pressed, dried and tested for the various strength properties. Here again the method varies, some mills depending on the mullen test alone, others on a combination of the mullen and tear. European mills, on the other hand, rely on the tensile strength of the sheets to give an indication of the value of the pulp.

Most manufacturers use the beaten strength method for evaluating their product, some beating the pulp to maximum strength, others for a specified time interval only. Recently the unbeaten method, which was first advocated by R. B. Roe, has obtained much attention from those interested in the matter of strength testing of pulp. The relation between the initial strength and the beaten strength of bleached sulphite pulp has been brought out by Grenberg,[16] who showed that a knowledge of the initial strength made it possible to predict the qualities obtainable by beating the pulp. A large amount of work has been done by numerous investigators in an attempt to standardize this method of testing pulp for strength.[17,18] Last year a proposed standard method was published and this was adopted as a tentative standard by the two American Associations.[19] The details of procedure, such as initial moisture content of the sample to be tested, disintegration, area and weight of the test sheets, rate of drainage from the sheet machine, pressing, drying, etc. have been discussed fully by Genberg[20] and Laymon[21] and need not be gone into again here.

While manufacturing bleached sulphite pulp for the open market we carried out both the unbeaten and beaten strength tests and correlated these in judging the quality of the product. Now, however, all our output is pumped in slush form direct to the paper mill, and as a result of much investigation and comparison of results we have found that the initial strength test alone gives all the information necessary as to the qualities of the pulp for papermaking purposes. Our actual testing procedure has been modified slightly from that of the proposed method, especially as regards the drying of the test sheets, in order to make it more suitable for routine work. By this means the complete test is performed every two hours and thus a constant check is maintained on the quality of the pulp. The procedure of the test as used by us is described in the following paragraphs:

Procedure for Strength Testing

A sample of bleached stock in slush form is taken directly from the pipe-line to the paper-mill and the consistency determined. This is done by measuring out 250 cc. of the stock, filtering on a sheet of filter paper in a Büchner funnel, pressing the pat to remove excess moisture, and drying on a hot plate at a moderate temperature, care being taken not to char the pulp. The pat is then weighed and the consistency calculated. From this latter value the volume of stock necessary to give a sheet having an air-dry weight of 7.5 gms. is determined. This weight is equivalent to the standard ream weight of 125 lbs. per 500 sheets 25 by 40 inches.

Sheet Making—Six test sheets, 8 by 8 inches, are made, using a Date sheet machine such as is specified in the appendix to the proposed method. The procedure for making the sheets is that in the proposed method, the drainage time being kept between 12 to 14 seconds. Four of these sheets are used for the strength tests the other two being used for determining the colour and dirt respectively.

Pressing—The four sheets to be used for the strength testing are pressed according to the procedure given in the tentative method, that is, first between felts at 40 pounds pressure per square inch of sheet area for 30 seconds, then between eight blotters on each side for 5 min. at 200 pounds pressure, and finally between four blotters per side for 2 minutes at 200 pounds. The two sheets for the determination of colour and dirt are couched off on clean blotters and kept between these during pressing. That for the dirt determination receives only the first pressing, the sheet for the colour determination being also pressed at 200 pounds for 5 minutes.

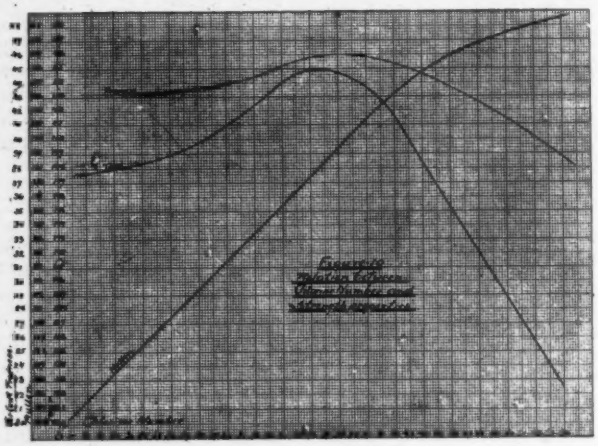
Drying—The sheet to be used for determining the dirt in the pulp is not dried, the dirt count being made while the sheet is still wet. The remaining sheets are dried in a hot air blower at a temperature of about 160 deg. F. for 15 minutes, that for the color test being dried under tension between the blotters. At the end of 15 minutes the four sheets for the strength test are hung in a humidity room kept at a relative humidity of 65 per cent and a temperature of 70 deg. F.; they are left here for an hour at the

[16] P. T. J., Feb. 24, 1927; P. & P. Mag. Can., April 28, 1927.
[17] Genberg, P. T. J., Jan. 27, 1927.
[18] Cameron & Payne, Paper, Feb. 14, 1924; P. & P. Mag. Can., Jan. 17, 1924.
[19] P. T. J., Feb. 23, 1928.
[20] P. T. J., Sept. 15, 1927; P. & P. Mag. Can., Dec. 8, 1927.
[21] Laymon, P. T. J., Feb. 24, 1927; P. & P. Mag. Can., May 5, 1927.

end of which period they have reached the correct condition necessary for carrying out the strength tests. The colour sheet on removal from the blower is cut in the required form and the colour of the pulp determined on the ordinary disc machine.

TESTING—The four sheets are weighed and the basis weight determined in the usual manner. A strip of the required width is then cut from each sheet for the tearing test which is made on an Elmendorf tester, four tears being made on the four thicknesses. The four values thus obtained, when added together, give the tearing resistance which is expressed in points per 100 pounds basis weight by multiplying by 100 and dividing by the basis weight of the sheets. For the bursting strength the mullen tester is used five pops being made on each sheet. The average of the twenty values is expressed as above in points per 100 pounds basis weight. For our own purposes we combine these two results and call the figure obtained the total strength of the pulp tested.

Thus every two hours we determine the following characteristics of the pulp:- its consistency as pumped to the paper-mill, mullen and tear, (which combined give us the total strength) colour and



dirt. The chlorine number, or purity of the unbleached pulp, is also determined every two hours. These results enable us to control the quality of the pulp and, as will be brought out later, to predict its subsequent action in the various operations it must undergo in the paper-mill.

TABLE 14
RELATION BETWEEN CHLORINE NUMBER AND STRENGTH PROPERTIES

Chlorine Number	Mullen	Tear	Freeness
1.8	104	146	43.7
1.9	101	163	49.3
2.0	103	146	43.8
2.1	108	151	44.7
2.2	110	151	42.3
2.3	112	126	31.7
2.4	110	146	42.4
2.5	107	150	42.4
2.6	113	146	44.0
2.7	112	148	43.0
2.8	112	150	42.5
2.9	114	146	42.4
3.0	114	148	43.4
3.1	115	153	43.6
3.2	116	154	42.9
3.3	118	148	43.3
3.4	117	159	45.7
3.5	119	147	43.0
3.6	116	155	45.0
3.7	121	151	45.1
3.8	122	151	43.3
3.9	124	158	48.1
4.0	131	151	44.7
4.1	120	141	45.7
4.2	138	134	42.0
4.3	126	143	39.7
4.4	126	145	44.6
4.5	130	148	46.4
4.6	126	152	47.9
4.7	130	147	49.0
4.8	125	133	39.5
4.9	130	133	43.7
5.0	130	124	39.1
5.2	132	140	37.4
5.4	129	135	42.0

TABLE 15
CHLORINE NUMBERS AND STRENGTH OF DIFFERENT GRADES OF UNBLEACHED SULPHITE

Grade	Chlorine Number	Mullen	Tear	Freeness
A	9.53	131	133	28.3
B	6.75	126	138	31.2
C	6.27	119	110	31.2
D	5.00	108	117	28.4
E	4.92	109	150	33.3
F	4.68	95	116	12.5
G	4.64	105	144	36.1
H	1.71	117	117	34.0
I	1.71	99	137	24.3

Relation Between Chlorine Number and Strength of Unbleached Pulp

While there is no apparent relation between chlorine number and strength properties of pulp in individual determinations, the averages of a large number of tests tend to bring out a more or less distinct relationship between these two properties of the pulp.

It can be expected that in general, when all factors are considered, a high chlorine number should give a pulp with a high mullen, low tear, and low freeness. As the chlorine number decreases the mullen should decrease and the tear and freeness increase to a certain point, after which they both decrease. The chlorine number, as has been pointed out before, is an indication of the amount of lignin remaining in the pulp and this impurity in the fibers governs the hydration properties of the pulp. If the pulp contains much lignin, or is cooked down to a low lignin content, which always results in an attack on the cellulose itself, it is easily hydrated. In the first case the pulp will have a high mullen and in the latter a low mullen, but the tear and freeness may be the same in both instances.

The exact location of the point of delignification at which the pulp has its highest purity coupled with maximum strength and freeness is dependent, no doubt, on local conditions such as wood, cooking temperature and time, etc. Table 14 is a tabulation of 311 observations of the strength properties of unbleached pulp of varying chlorine numbers. From this table it is seen that the mullen increases with increase in chlorine number of the pulp. The changes in tear and freeness are not so apparent and regular but by plotting the strength properties against the chlorine numbers, as in Fig. 10, we find an increase in tear and freeness with increase in chlorine number up to a chlorine number of about 3.7 or 3.8 per cent after which the tear and freeness drop again while the mullen continues to rise although at an increasingly slower rate. This is the average relation between the chlorine number and strength properties of the same grade of unbleached sulphite pulp. There is no such relation for different grades of unbleached sulphite as is shown in Table 15. Here it can be seen that pulps with practically the same chlorine number may have entirely different strength properties.

(To be continued)

Makes New High Hydro-Electric Records

[FROM OUR REGULAR CORRESPONDENT]

OTTAWA, Ont., April 16, 1929.—The Canadian Hydro-Electric Corporation, Limited, controlled by the International Hydro-Electric System, a subsidiary of the International Paper and Power Company, produced 166,904,00 kilowatt hours of electric energy in March, two and one-third times the output of the Corporation in March, 1928, and the second highest production for a single month, being exceeded only by that in January. In the first quarter of this year, the corporation generated 496,039,000 kilowatt hours, over twice the output of the corporation in the first quarter of last year, and the greatest for any quarter in the history of the corporation.

Industrial activity in Canada in the first three months was maintained at a high level, and preliminary reports indicate that business was on a greater scale than in the first quarter of last year. There was a larger movement of merchandise in production, importation and distribution than a year ago. Comparatively few branches of industry and trade operated below the high levels of last year, and in both value and volume commercial activity as a whole made new high records.

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How to Control Your Budget

By Edward W. Meyer[1]

Budgetary control is a matter in which I have been interested for many years. Going back into history, even the Romans had their budgets; the mariners of the Mediterranean Sea had their budgets. As a matter of fact, the principle of budgeting is a thing that has been with the human race for ages and ages, but never recognized as a concentrated thing which was actually in effect.

"Budgetary Control" is a subject open to two points of view. The first is that of restriction. The one thing that we want to be cautious of in handling budgets is not to consider a budget as being a thing which restricts a man. The other view which may be taken of budgetary control is that it extended authority to the supervising forces, such as the foreman and the men on the job who are responsible for doing the work.

The dictionary defines the word "budget" as "a small sack or bag, with its contents, and hence a loose bundle." And a lot of people look at it as a loose bundle and say the budget is no good. We also find the dictionary says it is a collection or store, as of news, anecdotes, etc.

Governmental Use

The other definition is, "A statement of probable revenue and expenditure, and of financial proposals for the ensuing year, as presented to or passed upon by a legislative body." Now, when we reach that point we find the budget first takes its form as a definite object through use by governments, and there is where the restrictive feature of the budget got its first task.

The only income a government has is that which it obtains through taxation. The government must know how much money it needs to run the job. Since it obtains its money or its income through taxation and not through the sale of commodities, there is a restriction, first placed on government, in the way it obtains its revenue; and, likewise, when the government prepares its budget it must, of necessity, place certain restrictions on its budget system.

State Budgets Cannot Be Altered

Government budgets, as you may hear them referred to, provide occasionally, we will say, for twelve brooms to be purchased during the year. When the twelve brooms have been bought it is impossible to buy the thirteenth broom, because the comptroller of the budget will not permit the purchase of a thirteenth broom.

As a practical proposition in business, that procedure cannot be followed in a budget system. And that brings up the point that a budget system must not be restrictive in nature. If it is, it is doomed to failure. So that, in order to give business the opportunity to expand, we must look upon the budget more or less as a general plan or a program which permits the personnel of any organization to proceed uninterruptedly for a period of time.

In some cases, that period of time may be one year; it may be six months, or it may be three months. But, at any rate, regardless of the period of time involved, you do give that authority out to your personnel and your staff, so that they may proceed uninterruptedly in the conduct of their work.

These definitions reflect the history of the idea of budgetary control from a vague, indefinite and unorganized thing, to the first application of budgetary control in government affairs. The budget system in the business world may be defined as the exercise of business judgement, based on recorded information, both past and present, separated by the formulated in the objective and definite plans for future control of business and its expenditure, and balanced off and compared with actual performance.

The point I want to bring out there is this, that the budget should set up an objective. I have run across quite a number of men who were opponents of the budget system, and I have had them remark to me, "How can we tell how much money we are going to spend when we do not know what is going to happen?" I can answer that question by asking another: "How do you ever expect to be and stay in business if you do not know what is going to happen?"

You must set up your objectives. Make an attempt to reach those objectives; and if you get there you fulfill the thing that you set out to do. And, after all, there is no harm done, if, by chance, you do not accomplish what you have set out to do.

The essentials of the budget system have been followed and used more or less effectively and unconsciously in many different activities and relationships. The essentials of the budget system in a large business organization are, *first*, a detailed statement of the plans of each department for a certain period of time, in the form of estimates, giving all of the essential facts concerning its proposed activities and expenditures; *second*, the coordination of these estimates into a well balanced program for the business as a whole; *third*, management of the departments of the business in accordance with the budgetary program, and accounts and records so kept that reports can promptly be prepared, comparing actual with estimated performance; and *fourth*, revision of original plans where the present view indicates the necessity of a revision.

The budget should give a clear, comprehensive and complete picture of the program of the organization in all of its essential phases. It involves the study and forecast of probable future trends in general conditions, as well as in the immediate field in which the company may be engaged. In involves an analysis of

[*] Manufacturing News.
[1] General Auditor, Southwestern Bell Telephone Co.

markets and future prospects, of competitive conditions, and raw material resources, of transportation facilities, available labor and power supplies.

Now, I think that in practice, when a budget is once set up it should not be so rigid that, if the personnel of the organization sees the way to make an additional ten thousand dollars of profit, the expenditures of money should be restricted to avoid the possibility of making ten thousand dollars of extra profit. That, of course, would be foolishness, and there is no budget system contemplated in good business which will take thousands of dollars of the profit and throw it by the wayside in order that somebody can, at the end of the year, say, "See how well I have made my budget, I came out to the penny." That is the danger to be avoided in any budget system.

Revisions Are Necessary

To overcome that feature there should be added to your budget system some plan whereby you can change your budgets, and call that revision the "present view." That is, you may let your budget stand as it was originally made, and then if you find, as the year goes by, that there are changes in conditions which require a modification of the budget, a system of keeping records of those changes should be adopted, and those changes, when properly approved by the management, should be added to the budget or deducted from the budget; and the sum of the two, or the deduction from the budget, should present what might be termed the "present view".

"The development of comprehensive budgetary control involves considerable educational work in the various departments of an organization. The budget should represent a proper co-ordination of the activities of the various departments, which can best be accomplished by having the plans of each department submitted concretely for consideration of the executives of all departments. The purpose and need of the budget system must be dmonstrated as clearly as possible to all managerial personnel in order to secure intelligent coordination and co-operation.

The length of time for which a budget is prepared in any business organization must be determined upon the basis of the needs of that particular type of business organization. If the type of business is such as to require long-termed planning and construction in anticipation of definitely assured growth and development of business, a longer-term budget will be essential for the proper control of the business than when necessary expansion can be made on short notice. Such long-term budgets may involve programs of five years or more in advance, but will ordinarily be supplemented by more detailed short-term or annual budgets.

Other factors to be considered in determining the length of budgets:

A—Seasonal variations.

B—Requirements in codes of established methods of finance.

C—The limitations of existing facilities, as well as the problems involved in curtailing or enlarging production facilities.

D—Special considerations in industries possessing peculiar characteristics, such as very rapid expansion in younger industries, or in depletion of resources in extractive industries, and the like.

Now, in the preparation of a budget, it seems essential that the historical background for considering future objectives is one that must be determined by the type and kind of business. It may be necessary to study operating results, production results, for a period of at least five years prior to the year for which a budget is made. In some cases it might be necessary to go back as far as ten years.

The proper statistical organization, or statistical organization properly organized, can furnish the information, or should analyze the information with the idea of giving to the managing officers and the department heads such historical information; and, if necessary, translate that into graphic charts, in order that you can see by the slope of a line what the trend has been in the past. Projecting that line into the future would give you a general indication of where you might be provided the business in the future will equal that in the past, taking into consideration the rate of growth.

Even Seasonal Factors Change

We know that there are changes in the art of manufacturing; there are developments which change what might be termed the seasonal variations. We have a very good example in the wheat combine. There was a time when the harvesting of wheat would be done, the bulk of it, in the month of July. The use of the combine has made such changes in the method of harvesting that the grain itself is cut off the field, run into the hoppers, threshed and from the thresher it goes into a wagon or an automobile truck. From there it is taken down and dumped into the freight car; compared with the old practice where the wheat would be cut and stacked and then a threshing machine would come along about two or three weeks later, the straw all piled up in one pile, the wheat taken off in a wagon and then pulled away.

Now, that has made a very considerable change in the seasonal variation in the handling of wheat. I am merely using that as an illustration to show that regardless of what business you are engaged in, you will find, quite likely, that some of these economic changes affect your production, your output, your method of selling, and things of that sort. That brings out the importance of departmental co-ordination.

Most businesses have what might be called a commercial department, or a sales department. They also have manufacturing departments, which are divided up into sub-departments. You have your executive department, financial department, and you have your accounting departments. There is not a budget made but should receive the fullest consideration from all of those departments.

A properly constituted accounting department should establish the historical background of the past activities of any industry. They should furnish to the management and the department personnel all of such information which will be of value to them in studying out their own job. The accountant cannot and should not study the job for the production department and tell the production department man what he can and should do. Neither should the treasurer's office by reason of his being involved in financing, tell the production department what it can and should do. There is only one executive in the corporation which I believe can tell any department what it should do, and that is, of course, the president.

I have read quite a few articles on budgetary control. Occasionally I find one written by a man that is a treasurer, and all that I see is budgetary control as it is from the treasurer's point of view. Another time I may read an article written by an accountant, and all I see in his article is how the accountant can control the business.

In order that there may not be any misunderstanding I would like to say I was born and raised an accountant, and that has been my job most of my life, and I do feel that while the accounting department has its place in the business, there are many things in connection with budgetary control that should not be left to the dictation of the accounting department, or the treasurer's department, or the manufacturing department or the sales department or any other department. But the departments should all get together, co-ordinate their ideas and produce a budget which, from the viewpoint of good business and sound business practice, is the best thing for the company to do, regardless of what your station or job is in the industry. And that requires a considerable amount of co-operation on the part of all the people involved in the management and the conduct of business.

The results of wise and effective budgetary control in industry and business are far-reaching and worth many times the time, effort and expense involved. The development of budgetary control in government and in industry in the United States during

the last eight years has contributed remarkably and substantially to the growing and continuing prosperity in this country.

Management Remarkably Improved

The thorough study of past and present results and of probable future developments and tendencies has given the larger business organizations a so much better understanding of general business conditions and of economic principles underlying business prosperity that remarkably better management and control of the operation of such organizations has resulted.

Some of the evidences of these developments are as follows:

Establishment of growth of technical and statistical research departments in such business organizations.

Reductions of inventories; development of hand-to-mouth purchasing.

The speeding up of turnover of stocks of goods and capital investments.

Increasing amounts and rates of return on capital invested in the business, concurrent with greater production per employe.

Increased wage rates.

Reduced expenses per unit of output; and

Reduced prices to the consumer.

A few of the major elements in business, the control of which is made possible through the budget plan, are as follows: (1) Materials. (2) Manufacturing and production. (3) Operating methods. (4) Revenues and expenses. (5) Basic data for all major supervisory action; and, (6) Supervising of financing.

Now, you will say, since I read all of those items as being important from a budgetary point of view, you will realize that the most effective budget and the most efficient budget which can be prepared is one in which the proper managerial heads have all had a part.

We are looking at familiar types of budgets. In order to impress upon your mind the importance from a business point of view, let us look at personal budgets. How many men, anticipating the purchase of an automobile, have studied their income, their bank account, the cost of operating a car, and compared that with their ability to pay the way? Whenever that is done, it in itself is a budget.

Let us look at the business budget as a well rounded program for controlling the future course of a business during a definite period. We have estimates of future activities and requirements of the separate departments of the business; sales, production, of purchasing, plant engineering, advertising and finance. The co-ordination of these estimates into a well-rounded program for the business as a whole may also include a forecast of future performance beyond the period covered by the budget.

A good many businesses make budgets merely for the ensuing year. For instance, you may begin in the fall of 1928 and make a budget for the year 1929. The question arises, will you be better off if you extend that estimate into several future years?

Let us take a manufacturing industry, for instance, that must plan its machinery and the building of its machinery for production for some time in advance. You have got to add that machinery. It involves capital outlay. At the same time, you don't want any more machinery than you need for your immediate production; but you want to be prepared to meet the growth in business.

To do that efficiently you have got to consider your machinery program for practically as many years as you think it is economically safe to go. There are some businesses that estimate their future requirements by years for five years in advance; I might say, incidentally, that that is exactly what we do in our business. We estimate our construction program for 1929, and we estimate it for each year thereafter for five years; that is, five years including the year 1928. We do the same thing for all of our expenses.

The results accomplished by that procedure, I believe, justify making estimates that go far into the future, because it requires a review of your plant and equipment that it is properly being operated, to determine whether or not it will have a useful life of one, two, three, four or more years. If it requires replacement during that intervening period you will prepare for it and have that replacement made instead of having the thing break down, and find, when you are in the middle of a big job, that you have to have the machinery replaced, and lose just that much business due to the loss of production.

And those things happen. We have them happen occasionally with our adding machines. In the past two years we have made a review of our mechanical equipment in the accounting offices, divided our purchases into two parts; that which is the replacement of existing equipment, and that which we require for added business and new business which we expect to handle in the next year or two, so that we even try to avoid having an adding machine break down, because sometimes they break down just at the time when you cannot afford to have them break down.

After final approval, various departments make plans for carrying out their portion of the budget. Now, when you make up a budget I do not think there should be one big book to go to the president which tells what every other department is going to do. The thing to do is, to get a blanket form of budget to bring down into concrete form that in which the executives are specially and immediately interested; then each department can prepare a budget of its own.

But that budget must tie in with the company budget. Your manufacturing department can prepare a budget; your sales department, your financial department, your accounting department or any other department; and those can be further broken up into various units of the organization. The refinements that you go into in these sub-budgets, or sub-divisions of the budget, can be made to meet the needs and the fancies of the man in charge of the work, providing, however, that too much red tape is not injected into your budget system.

Budget May Be Too Fine

There is such a thing as trying to get your budget down too fine, and as soon as you do that you lose considerable value, because you will try to get your results to match up exactly with your budget; and then if you do not watch out, you are making the budget manage the business instead of you, yourself, managing the business.

The budget should serve as a guide and should also possess flexibility; and it should not be followed blindly.

There are limitations in budgeting: For industries that have not yet begun a budget system, it must be introduced gradually. In other words, do not try to cover the whole business at the first bite. The budget is, of necessity, limited entirely upon estimates, and as a consequence, you must review your past experience with a review of your probable future experience; and the forecast of the future general conditions may prove inaccurate, which is, of course, no criticism of the budget.

You set up your objective, that is, the thing you are going to try to do; but if by some accident or circumstance you do not accomplish that objective, there should always be a good reason as to why it is not accomplished.

The first question to be asked relates to the importance for consideration of contemplated activity during a new year when determining the budget.

I have pointed out the danger to be avoided when I referred to the need for proper departmental co-ordination. I have also pointed out dangers to be avoided when putting a new budget system into effect, in trying to put the thing all over the map, instead of taking a bite.

In looking at the activities for the ensuing year, the question has been put upon the basis of the new year; but I believe there are many that can justify estimates for more than one year in the future.

COST SECTION

The second question relates to factors to be considered in setting up a budget for labor. I think that in almost any kind of a business you can determine what we might call production units; that is, the units of work which a man can produce in one hour by using the best methods and the best system in doing the work. If you have a sales program or a manufacturing program expressed as units of material, and if you, by your past experience and studies, have shown that it takes so many hours to produce, say 60 tons or 250 tons or 1,000 tons of castings; and if you estimate that, during the subsequent year you are going to produce so much steel, or so much flour, or so much electric current, you can take these labor units, convert them into hours of labor, apply your average working day and your average rates, and make your estimate on some basis of that sort.

I believe that, especially in the manufacturing industry, the estimates of labor are important items to consider.

Taking the third question: Consideration to be given past experience in setting up budget to cover supplies, repairs and maintenance; should one year's past experience or a longer period be considered?

There may be some businesses where one year past is sufficient; but I doubt it. When you study the economic side of business conditions you will always find that they are like finger prints. You will never find two years alike. You may find a business curve beginning on an upward trend in the early part of a year and ending at the end of a year. The following year you might find it dropping off a little more rapidly, and beginning to take a decline in the middle of the year, dropping to the bottom at the end of the year. You might find that business cycle beginning in any one month in any year, and the result is that conditions of one year compared with another from a business point of view and an economic point of view are not the same.

The best thing you can do is to pray to the law of averages to keep you straight. I am a firm believer in the law of averages, and if you will project in a statistical way your past experience over several years, perhaps five, and sometimes ten, and then project that forward into two, three or four years, and then use your judgment to bring the thing up and down with the business conditions as you sight them, as a practical proposition, I think you can prepare a much better budget, and your experience will tell you whether you ought to use five years or ten years. In a very active business, in a rapidly growing business, ten years is too long, and five years would be better; but as a practical proposition one year is useless.

Fourth question: In determining budgets, there are abnormal charges which appeared in past years' costs, some of which may probably repeat, others are very questionable; should they be considered or not?

The only remark I have to make about that is, don't deduct anything in a budget, whether it is abnormal or subnormal. If you are going into the budget system you should include in that budget system those things which are quite likely to happen; and if you suspect that there will be an abnormal item in your budget system it should be set up in the budget and clearly earmarked in order that when the executives review the budget, it is quickly disposed of in their minds without delay, and causes less interference with the supervisory employees going ahead with the work. I do not believe that any item of expense should even be eliminated from a budget.

Question five relates to plans for pricing raw materials on predetermined basis and the disposition of difference between standard raw material costs and actual. How that should be handled depends more or less on the nature of the business.

When I look back, perhaps into the milling business, that is the manufacture of flour, they have a business called "hedging", in wheat. When you have any practice of that kind in your business it affects your production costs. Some people may not agree with me that it affects production cost, but I will make this statement, that there is not anything that you do in your business, and I do not care whether you buy your materials two years in advance or pay for them two years in arrears, every element that goes into the balance sheet statement, into the financial structure of your company affects production cost.

The broad general answer to the question would be that in pricing your product, and using basic raw material prices, you should make the best effort to get as near as possible to the actual cost to the company of that material entering into the production of the thing that you make.

We have difficulties in pricing our materials, and that is a problem that every business concern is involved with. It is almost a practical impossibility for any big business or a business of any size to get a homogeneous set-up of prices that you pay for your products with the production cost that you show in your cost sheets; but nevertheless it should not deter you from adopting ways and means of getting the two synchronized as nearly as possible in order that your production cost will fairly represent the cost of producing the things that you are selling.

The sixth point is that properly established budgets permit the developing of manufacturing departmental profit and loss.

That feature is one with which I have had no contact for perhaps 19 or 20 years. In our business we have gotten away entirely from such a thing as a department making a profit. The company makes the profit. I can see where, in a retail store or in a jobbing house selling different kinds of commodities, each commodity assigned to a department, there is a real need for determining departmental profits or losses. I can also see where a certain type of business might use it for building up the incentive of the organization so that they really realize that they are a part of the business and that they, in their active conduct of the business, are making a profit for the company. I can really see that there are some advantages in having departments credited with the work that they do, and that that credit will be the cost of the production plus something for profit. I believe, perhaps from the psychological point of view, that to encourage the work of the people engaged in departments of that type, perhaps a thing of that sort is advisable. Nevertheless, regardless of how much profit you credit to any department, the facts in the case are that the only profit the company benefits by is, that which represents the amount for dividends and surplus.

The seventh point relates to budgets as a basis on which to predetermine future manufacturing costs.

The budget itself, properly prepared, forms one of the finest of bases for the predetermining of future manufacturing costs; providing, however that studies are approximately made of operating technique. By that I mean that handling work from bench to bench, or from floor to floor, or department to department, should be done along the lines of least resistance, and those factors taken into consideration will give you encouragement to look for future benefits in the development of further reductions in the cost of production. And I believe that efforts made along those lines will pay a corporation more than it costs to operate a system of predetermining manufacturing costs on the basis of a budget.

As a matter of fact, the ultimate budget of an organization can be amplified and spread out so that it reaches all parts of a company, and that includes your manufacturing unit and production cost, or anything else you wish to associate with the system; bearing in mind, however, that the details for the direct management are not brought up into a great, big, bulky form to the executive officials, and which they probably would not have time to read.

Question number eight is, when should standards be changed? We make, in our business for our company what is called a "business curve," and that business curve is made up of a composite effect of oil production, cotton, wheat production, corn, electric light and power consumption, prices of wheat,

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corn, oats, shipments of hogs and cattle, and bank debits, and things of that sort.

Effect of an Oil Strike

Well, we found a few years ago in building up this business curve that there was a sudden boom caused by the striking of oil at Eldorado, Arkansas. The result was that the striking of that oil pushed our business curve up abnormally. It gave us quite a hump, and we had discussions with our officials as to whether or not we should weigh the normal curve against this actual result, as compared with this new field of production in oil. Now, if we would weigh the normal curve with this new production in oil we would, naturally, flatten out this hump, caused by the Eldorado field; and the fact that that happened would be lost sight of. And I held out against making any modifications in the curve on the theory that we did not have enough experience to know whether the Eldorado oil well would remain at that level. And not until we were reasonably sure that the production there would remain at that level did we feel justified that it should be made a part of the composite curve which we refer to as normal, and against which is compared the actual results.

Luckily, that area dropped off in oil production to a point that when the clouds had passed by our original figures were satisfactory and remained intact. In other words, they remained where they should be.

Now, if we are going to deduct what we might call standards by flattening out all of our stuff as quickly as events happen, we will always hide the unusual things, and that is what you do not want to hide in the budget. You do not want to change any standards in a budget if you are not sure that they are real; as long as you believe that those things are merely accidentals and incidentals in the operation of your business, leave them to stand out like a sore thumb, but never hide them. And always keep your standards on the basis of what you think will be the normal standard which you wish to follow. If you find that something unusual happens, but you are also sure that it is a practical or satisfactory thing which will strike a normal level, leave it alone.

St. Regis Traffic Department in New York

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., April 22, 1929.—The traffic department of the St. Regis Paper Company has been established in New York City. Joseph A. Quinlan, who has served as traffic manager of the Bates Valve Bag Corporation and all other affiliated concerns of the St. Regis group, will establish his main office in that city and several others who have been employed in the Watertown offices have been transferred to New York.

Mr. Quinlan announced that he planned to continue many of his connections in this city. He will continue to serve as chairman of the traffic committee of the Watertown Chamber of Commerce and as traffic manager of the Northern New York Development Association. By being located in New York he will be even better equipped to handle the traffic affairs of these two organizations.

The officers of the chamber and the development association are said to welcome this new opportunity of coming in contact with the Metropolis. The many cases which Mr. Quinlan has started in the interests of the chamber, the association and Northern New York relative to freight rates will be continued to completion. The entire program is to be completed by Mr. Quinlan and his associates and all new freight rate problems will be handled by him as in the past.

Mr. Quinlan left during the week for Chicago to attend a hearing of the official classification commission which investigated proper ratings on paper bags. Both the Bates Valve Bag Corporation and the Taggart Brothers Company are reported interested in the investigation.

Prosperity for Northern New York

OSWEGO, N. Y., April 22, 1929.—An era of expansion and prosperity for this section was forecast by Floyd L. Carlisle, president of the St. Regis Paper Company, at a mass meeting last week in the rooms of the Chamber of Commerce here. Two new industries are to be established here within a short time in following out extension of the interests of the Carlisle firm in this vicinity and other improvements of a wide nature are also predicted. The entire machine factory of the Bates Valve Bag Corporation recently acquired by the Carlisle interests will be moved to this city from Chicago and a new modern plant is to be constructed adjoining the Oswego bag factory, another factory just established here by the firm. Ground for the new factory will be broken in the very near future. The number of men to be employed in the Bates Valve mill was not announced but it is expected that several hundred will find steady work. All of the machines used in the mills of the Bates Corporation which are scattered throughout this country and Canada will be turned out at the new factory. The other industry being backed by the Carlisle firm is the John Lagoe & Son Machine Company, which plans to erect a modern plant here employing a large number of workers. It is understood that the two new enterprises will employ mostly men, many of them being high paid mechanics.

Addressing the large gathering Mr. Carlisle also announced that two big docks are to be erected by his company as soon as a breakwater is provided and that raw material will be shipped by boat into this city and the finished product shipped out by water. His address in part follows:

"Some time ago I was here to tell you what would be done if the city power was developed as planned. I said there would be new factories locating here. I promised one factory but we have built two and now I am here to tell you that we are going to move the machine shop of the Bates Valve Bag Corporation to this city. We are moving it from that second rate city of Chicago as compared with Oswego. The machines are used all over the world. The machine shop is being brought here to get it nearer central operations of our interests and ground for the new factory will be broken very soon. But this is only an incident of what can be done and will be done. Progress is made only by people who are discontented with things as they are. I have never wanted things exactly as they are and I have visioned a great future for Northern New York where I have spent a great part of my life trying to bring about that desired result."

Mr. Carlisle mentioned the great consuming market at the door of Northern New York and said the south and west were shipping products into this market "which should be ours." He also said that only one-third of the waters of the Oswego River can be used profitably and claims that if $1,500,000 could be spent in the construction of dams in the upper regions of that river the flow could be so regulated as to use the other two-thirds of the river. He urged that the citizens of Oswego become aroused and demand the right to store the waters at the head of the river. He also urged the people to support the development of the St. Lawrence River stating that water storage and the development of that river were the two things that are magic and can unlock Northern New York. Mr. Carlisle said that the people of Oswego should work for the development of the harbor and announced a plan to construct two big docks for loading but he claims they will not be built until a breakwater is furnished.

The new plant of the John Lagoe & Son Machine Company, which is locating here through the efforts of Floyd L. Carlisle and his associates, will be located on Mitchell street. Plans call for the erection of a structure 90 by 120 feet allowing space for future expansion and a warehouse 30 by 100 feet.

Index Numbers for Paper and Pulp

WASHINGTON, D. C., April 24, 1929.—March wholesale index number for paper and pulp taking 1926 at 100 was 87.8 compared with the same for February and with 90.5 for March of last year, according to the Department of Labor.

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Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING APRIL 20, 1929

SUMMARY

Cigarette paper .....93 cs.
Wall paper .....1 pkg., 57 bls., 1 cs.
Paper hangings .....20 bls., 3 cs.
News print .....1454 rolls
Printing paper .....52 rolls, 247 cs.
Decalcomania paper .....35 cs.
Filter paper .....35 cs.
Drawing paper .....60 cs.
Photo paper .....3 cs.
Tissue paper .....74 cs.
Writing paper .....13 pkgs., 2 cs.
Colored paper .....10 cs.
Copying paper .....28 cs.
Stencil paper and ink .....83 cs.
Straw board .....162 rolls
Miscellaneous paper .....526 rolls, 9 bls., 209 cs.

CIGARETTE PAPER

P. J. Schweitzer, Ruth Alexander, Marseilles, 93 cs.

WALL PAPER

F. J. Emmerich, American Trader, London. 7 bls.
Schmidt & Pritchard, New York, Hamburg, 1 ble.
Globe Shipping Co., New York, Hamburg, 8 bls.
F. J. Emmerich, New York, Hamburg, 17 bls., 1 cs.
S. Stern Stiner, New York, Hamburg, 4 bls.
J. E. Bernard & Co., New York, Hamburg, 6 bls.
F. J. Emmerich, Scythia, Liverpool, 9 bls.
W. H. S. Lloyd & Co., Scythia, Liverpool, 1 pkge.
A. C. Dodman Jr., Inc., Majestic, Southampton, 5 bls.

PAPER HANGINGS

W. H. S. Lloyd & Co., American Trader, London, 16 bls., 3 cs.
A. C. Dodman, Jr., Inc., Scythia, Liverpool, 4 bls.

NEWS PRINT

Perkins Goodwin & Co., New York, Hamburg, 345 rolls
Journal of Commerce, New York, Hamburg, 74 rolls.
Parsons & Whittemore, Inc., Hagen, Hamburg, 444 rolls.
Parsons & Whittemore, Inc., Sparreholm, Hango, 79 rolls.
Journal of Commerce, Sparreholm, Hango, 80 rolls.
Journal of Commerce, Sparreholm, Hango, 432 rolls.

PRINTING PAPER

E. Dietzgen & Co., Veendam, Rotterdam, 82 cs.
Martin & Bechtold, Berlin, Bremen, 12 cs.
Keuffel & Esser Co., New York, Hamburg, 52 rolls.
Walker Goulard Plehn Co., Sparreholm, Hango, 112 cs.
——, Sparreholm, Hango, 41 cs.

DECALCOMANIA PAPER

L. A. Consmiller, Berlin, Bremen, 10 cs.
C. W. Sellers, Berlin, Bremen, 8 cs.
B. F. Drakenfeld & Co., Scythia, Liverpool, 10 cs. (duplex).
B. F. Drakenfeld & Co., Scythia, Liverpool, 7 cs. (simplex).

FILTER PAPER

H. Reeve Angel & Co., Inc., American Trader, London, 15 cs.
C. Schleicher Schull Co., New York, Hamburg, 16 cs.
The Importers Consumers; Ile de France, Havre, 4 cs.

DRAWING PAPER

Keuffel & Esser Co., New York, Hamburg, 60 cs.

PHOTO PAPER

J. J. Gavin, Scythia, Liverpool, 3 cs.

TISSUE PAPER

Old Master Paper & Pulp Corp., New York, Hamburg, 57 cs.
B. F. Drakenfeld & Co., Scythia, Liverpool, 7 cs.
F. C. Strype, Scythia, Liverpool, 2 cs.
S. Stern Stiner, Ile de France, Havre, 8 cs.

WRITING PAPER

Coenca Morrison Co., Ile de France, Havre, 2 cs.
Guibout freres, Ile de France, Havre, 13 pkgs.

COLORED PAPER

P. H. Petry & Co., Berlin, Bremen, 4 cs.
J. Beckhard, Berlin, Bremen, 6 cs.

COPYING PAPER

Corn Exchange Bank, Kuma Maru, Kobe, 28 cs.

STENCIL PAPER AND INK

Arlac Dry Stencil Co., New York, Hamburg, 83 cs.

STRAWBOARD

Grand Corrugated Paper Co., Inc., Veendam, Rotterdam, 162 rolls.

MISCELLANEOUS PAPER

Keuffel & Esser Co., Veendam, Rotterdam, 13 cs.
International F'd'g. Co., Veendam Rotterdam. 4 cs.
S. Gilbert, Berlin, Bremen, 31 cs.
Steffens Jones Co., Kuma Maru, Kobe, 2 cs.
E. H. Sargeant & Co., Gripsholm, Gothenburg, 1 cs.
D. S. Walton & Co., Gripsholm, Gothenburg, 526 rolls, 9 bls.
Japan Paper Co., Ile de France, 13 cs.
Coty, Inc., Ile de France, Havre, 21 cs.
P. J. Schweitzer, Ile de France.21 cs.
Cheramy, Inc., Ile de France, 3 cs.
A. C. Dodman Jr., Inc., Ile de France, 2 cs.
Standard Products Corp., Ide de France, 58 cs.

RAGS, BAGGING, ETC.

Whaling Waste Products Corp., Veendam, Rotterdam,, 45 bls. jute card waist.
W. Steck & Co., Veendam, Rotterdam, 24 bls. cotton waste.
American Rag Trading Co., Veendam, Rotterdam,, 187 bls. rags.
Castle & Overton, Inc., Veendam, Rotterdam, 464 bls. bagging.
A. W. Fenton, Inc., Veendam, Hotterama, 5 bls., rags.
Equitable Trust Co., France Maru, Hamburg. Bank of America, France Maru, Hamburg. 8 bls rags.
E. J. Heller Co., Inc., Ausonia, ——, 56 bls. rags.
Albany Fibre Co., Lepanto, Newcastle, 10 bls. rags.
G. W. Millar & Co., Lepanto, Newcastle, 54 bls. bagging.
E. J. Keller Co., Inc., Lepanto, ——, 687 bls. flax waste;
E. J. Keller Co., Lepanto, ——, 68 bls. bagging.
E. J. Keller Co., Inc., Lepanto, ——, 133 bls. rags.
Darmstadtt Scott & Courtney, Lepanto, Antwerp, 5 bls. rags.
Castle & Overton, Inc., Lepanto, Antwerp, 305 bls. flax waste.
Castle & Overton, Inc., Lepanto, Antwerp, 224 bls. thread waste.
Katzenstein & Keene, Inc., Lepanto, Antwerp, 125 lbs. bagging.
D. M. Hicks, Inc., Lepanto, Antwerp, 310 bls. flax waste.
Ayres W. C. Jones Co., Lepanto, Antwerp, 125 bls. cotton waste.
Salomon Bros. & Co., Lepanto, Antwerp. 376 bls. flax waste.
Gardiner & Cook, Inc., Lepanto, Antwerp, 26 bls. flax waste.
M. Lobsitz, Lepanto, Antwerp,, 15 bls., rags.
W. Schall & Co., Lepanto, Antwerp, 147 bls. bagging.
Brown Bros. & Co., Lepanto, Antwerp, 17 bls. rags.
Castle & Overton, Inc., New York, Hamburg, 51 bls. rags.
Equitable Trust Co., New York, Hamburg, 34 bls. rags.
Brown Bros. & Co., Caledonia, Glasgow, 107 bls. rags.
J. Cohen Sons Co., Inc., Caledonia, Glasgow, 15 bls. rags.
T. D. Downing & Co., Caledonia, Glasgow, 58 bls. rags.
A. H. Searle, Inc., Caledonia, Glasgow, 126 bls. rags.
Amsinck Sonne & Co., Inc., Thuringia, Hamburg, 20 bls. rags.
Manufacturers Trust Co., Thuringia, Hamburg, 17 bls. rags.
Darmstadt, Scott & Courtney, Saccarappa, Dunkirk, 36 bls. rags.
Katzenstein & Keene, Inc., Saccarappa, Dunkirk, 171 bls. bagging.
French American Banking Corp., Saccarappa, Dunkirk, 46 bls. rags.
Castle & Overton, Inc., London Merchant, London, 14 bls. rags.
Brown Bros. & Co., London Merchant, London, 74 bls. rags.
E. J. Keller Co., Inc., Lucia C. ——, 268 bls. rags.
Castle & Overton, Inc., Berlin, Bremen, 4 bls. rags.
Castle & Overton, Inc., The Angeles, South America, 522 bls. rags.

OLD ROPE

Brown Bros. & Co., Lepanto, Newcastle, 99 bls.
E. J. Keller Co., Inc., Lepanto, ——, 152 bls.
Brown Bros. & Co., Thuringia, Hamburg, 40 coils.
N. E. Berzen, Saccarappa, Havre, 52 rolls.
Furness Withy & Co., London Merchant, London, 137 bls.

CASEIN

A. Hurst & Co., Ile de France, Havre, 68 bags.

WOOD FLOUR

State Chemical Co., Veendam, Rotterdam, 420 bags.
H. J. Baker & Bro., Veendam, Rotterdam, 1800 bags.
——, Veendam, Rotterdam, 200 bags.

WOOD BOARDS

Lagerloef Trading Co., Sparreholm, Hango, 38 rolls.

WOOD PULP

Atterbury Bros., Inc., Oscar II, Oslo, 500 bls. wood pulp 100 tons.
Bulkley Dunton & Co., Hagen ——, 400 bls. wood pulp 80 tons.
Central National Bank, Hagen, Hamburg, 2000 bls. sulphate 406 tons.
Price & Pierce, Ltd., Gripsholm, Gothenburg, 2250 bls. wood pulp.
E. M. Sergeant & Co., Gripsholm, Gothenburg, 175 bls. sulphite.
Kidder Peabody Accep. Corp., Gripsholm, Gothburg, 254 bls. sulphite.
Parsons & Whittemore, Inc., Gripsholm, Gothenburg, 150 bls. sulphite.
Parsons & Whittemore, Inc., Gripsholm, Gothenburg, 120 bls. sulphite.
——, Heddernheim, Hernosand, 3930 bls. sulphate 655 tons.
——, Heddernheim, Hernosand, 10350 bls. sulphite 1725 tons.
Woodpulp Service Corp., Braheholm, Gothenburg, 125 bls. sulphite.
E. M. Sergeant & Co., Braheholm, Gothenburg, 1196 bls. dry soda pulp.
M. Gottesman & Co., Inc., Braheholm, Gothenburg, 600 bls. sulphite.
Price & Pierce, Ltd., Braheholm Gothenburg, 1625 bls. wood pulp.
O. E. Kiaer, Bradeholm Gothenburg, 222 bls. wood pulp.
Bulkley Dunton & Co., Braheholm, ——, 8325 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING APRIL 20, 1929

F. Whitaker, Saccarappa, Dunkirk, 6 bls. rags.
Katzenstein & Keene, Inc., Saccarappa, Dunkirk, 4 bls. rags.
Darmstadt Scott & Courtney, Saccarappa, Dunkirk, 389 bls. rags.
E. Butterworth & Co., Inc., Saccarappa, Dunkirk, 135 bls. rags.
J. M. Hagy Waste Works, Saccarappa, Dunkirk, 90 bls. rags.
G. Mathes & Co., Saccarappa, Dunkirk, 82 bls. rags.
National Waste Co., Saccarappa, Dunkirk, 45 bls. cotton waste.
N. E. Berzen, Saccarappa, Havre, 60 bls. old rope.
Paper Service Co., London Merchant London, 6 rolls wrapping paper.
E. J. Keller Co., Inc., London Merchant ——, 155 bls. rags.
National City Bank, Lucia C., Alexandria, 140 bls. rags.
Interstate Trust Co., Lucia C., Alexandria, 45 bls. rags.
Tradesmans National Bank, Lucia C., Trieste, 250 bls. rags.
E. J. Keller Co., Inc., Ala, ——, 198 bls. rags.

(Continued on Page 88)

Pulp Mill Knives for
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Barkers
Hogs
Shredders

Paper Mill Knives for
Washers
Beaters
Refiners
Jordans
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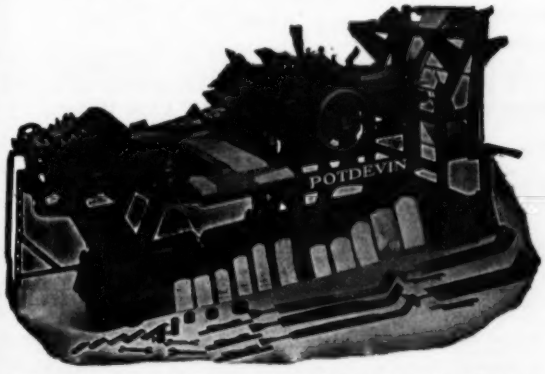

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Old Plates Reclosed and Re-cut to Accurate Gauge
Rolled Phosphor Bronze and Copper Plates for Rotary Screens
Sole Manufacturers of the Union Witham Screen Plate Vat and Fastener

Imports of Paper and Paper Stock

(*Continued from Page 86*)

E. J. Keller Co., Inc., City of Flint, ——, 112 bls. rags.
E. J. Keller Co., Inc., Liberty, ——, 256 bls. rags.
Castle & Overton, Inc., Westfalen, Germany, 151 bls. rags.
Castle & Overton, Inc., Lorain, Germany, 150 bls rags.
Castle & Overton, Inc., Liberty, France, 198 bls. rags.
Castle & Overton, Inc., Maryland, France, 600 bls. rags.
Castle & Overton, Inc., Chickasaw, England, 126 bls. rags.
Castle & Overton, Inc., Amasis, Germany, 5635 bls. wood pulp.
D. I. Murphy, Exmoor, Leghorn, 39 bls. rags.
Bank of The Manhattan Co., Exmoor, Naples, 106 bls. rags.
Chase National Bank, Exmoor, Algiers, 75 bls. rags.
Chase National Bank, Exmoor, Algiers, 77 bls. old rope.
National City Bank, Tagliamanto, Messina, 78 bls. rags.
National City Bank, Tagliamento, Palmero, 25 bls. rags.
Chase National Bank, Vermont, Havre, 122 bls. rags.
National City Bank, Vermont, Havre, 201 bls. rags.
American Exchange Irving Trust Co., Vermont, Havre, 56 coils old rope.
Farmers Loan & Trust Co., Tyrifjord, Oslo, 1600 bls. sulphate pulp.
Farmers Loan & Trust Co., Tyrifjord, Oslo, 600 bls. sulphite pulp.
J. Andersen & Co., Tyrifjord, Vestfossen, 500 bls. sulphite pulp.
Atterbury Bros. Inc., Tyrifjord, Oslo, 500 bls. wood pulp.
Brown Bros. & Co., Tyrifjord, Oslo, 700 bls. sulphite pulp.
Chemical National Bank, Tyrifjord, Tofte, 3450 bls. sulphite pulp.
Bank of The Manhattan Co., London Exchange, London, 37 coils old rope.
Phila. National Bank, London Exchange, London, 42 bls. rags.
C. J. Webb & Son. London Exchange, London, 39 bls. rags.
Atlantic Paper Co., London Exchange, Dundee, 56 bls. printing paper.
E. J. Keller Co., Inc., Anaconda, ——, 190 bls. rags.
E. J. Keller Co., Inc Binnendy,.k, ——, 158 bls. rags.

BALTIMORE IMPORTS

WEEK ENDING APRIL 20, 1929

S. Shapira & Co., Saccarappa, Dunkirk, 80 bls. rags.
Katzenstein & Keene, Inc., Saccarappa, Dunkirk, 197 bls. rags.
——, Heddernheim, Hernosand, 2860 bls. sulphate.
——, Heddernheim, Hernosand, 4896 bls. sulphite.
Bulkley Dunton & Co., Braheholm, ——, 750 bls. wood pulp.
Bulkley Dunton & Co., Easterner, ——, 1600 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING APRIL 20, 1929

American Exchange Irving Trust Co., Heddernheim, Hernosand, 7446 bls. sulphate 1241 tons.
——, Heddernheim, Hernosand, 2874 bls. sulphite 479 tons.
Atkinson Haserick & Co., Ruth Alexander, Genoa, 1 cs. paper.
Bulkley Dunton & Co., Liguria, ——, 1450 bls. wood pulp.
Castle & Overton, Inc., Italy Maru, Antwerp, 146 bls. rags.

CHARLESTON IMPORTS

WEEK ENDING APRIL 20, 1929

Castle & Overton, Inc., Magmeric, Belgium, 277 bls. rags.

NORFOLK IMPORTS

WEEK ENDING APRIL 20, 1929

Bulkley Dunton & Co., Braheholm, ——, 250 bls. wood pulp.
Bulkley Dunton & Co., Norfolk, ——, 250 bls. wood pulp.

NEWPORT NEWS IMPORTS

WEEK ENDING APRIL 20, 1929

——, Heddernheim, Hernosand, 1500 bls. sulphate 250 tons.

NEW ORLEANS IMPORTS

WEEK ENDING APRIL 20, 1929

Johanson Wales & Sparre, Inc., Braheholm Gothenburg, 302 bls. wood pulp.
International Accep. Bank, Braheholm Gothenburg, 800 bls. wood pulp.

New York Mills Running Full Time

CARTHAGE, N. Y., April 13, 1929.—Improved conditions are noted in several of the principal manufacturing establishments of this vicinity which have been running on curtailed schedules for several weeks past because of high water in the power canals and other causes. The Carthage Pulp and Paper Board Company started running on full time today after operating only a part of its equipment for the past month. It was learned that some old machinery was being removed and a new machine added which necessitated the closing of part of the mill while the work was being completed. The full force of workers have returned.

At Hadley the Luzerne Paper Company resumed operations this week on full time after being shutdown for several days on account of high water in the Hudson River which overflowed its banks and caused considerable damage in Northern New York. Repairs were made to equipment during the shutdown.

At Thomson the United Paperboard Company also started full operations during the week after being shut down for two weeks The company is said to have orders which will insure capacity schedules for some time.

Foster Box Board Co. Insures Employees

A group life insurance policy has recently been acquired by the Foster Box Board Company, of Utica, N. Y., for the protection of that company's 67 workers, for a total amount of $70,000. The policy was issued by the Prudential Insurance Company of America.

Each employee is insured in amounts ranging from $500 to $2500, according to the rank or position held and the policy is of the contributory type, the employees and the employing company sharing in the payment of the premiums.

Shipping Tag Simplification Proposed

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 22, 1929.—Manufacturers, distributors and users of shipping tags have been invited by the Department of Commerce to attend a general conference for a proposed simplification program for shipping tags, to be held in New York City April 26.

This conference is being conducted at the request of the industry, according to George Schuster of the Division of Simplified Practice, who has been representing the Bureau of Standards in the development of the proposed simplification. The simplified practice committee of shipping tag manufacturers submitted a proposal to the Division with the request that the Division organize the general conference of all interested elements to consider it. The proposal has the unanimous approval of manufacturers who contributed to its development.

In announcing the date for the general conference, Mr. Schuster pointed out that comparison of the simplified schedule proposed by the industry, with the existing variety of tags, discloses the fact that the proposed simplification would reduce the sizes of tags from 16 to 8; grades of stock from 21 to 9; thickness of stock from 7 to 5; and colors from 32 to 15.

Western Board Co. To Issue Bonds

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., April 22, 1929.—A bond issue not to exceed $500,000 on present property and "property that may be acquired" will be submitted to the stockholders of the Western Board and Paper Company for ratification.

The notice, dated April 15, set the date of the special meeting at 9 Friday morning, April 26. Directors are asking for authority to issue the bonds at such time as is deemed necessary. The purpose is not designated in the call.

THE DRAPER FELTS

All kinds and styles of Felts for all kinds and styles of Papers.

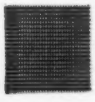
Write us about your Felt problems and let us help you reduce your Felt Costs—we will call anywhere at any time.

DRAPER BROS. COMPANY

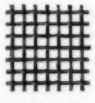
CANTON, MASS.

Woolen manufacturers since 1856

FOURDRINIER WIRES



In brass, bronze and phosphor bronze, widths up to and including 250 inches.



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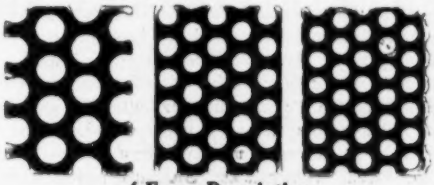
CYLINDER FACES
WASHER WIRES
and CORDUROY CLOTH

THE W. S. TYLER COMPANY
Cleveland, Ohio, U. S. A.

PERFORATED METALS



of Every Description
For Pulp and Paper Mills

THE HARRINGTON & KING PERFORATING CO.
5652 Fillmore St., Chicago, Ill.
NEW YORK OFFICE: 114 Liberty St.

The

ST. REGIS PAPER COMPANY

Daily Capacity 525 TONS

Newsprint
Catalog and Directory Papers
Fibre Wrapping Papers
Packers Oiled Manila
Specialties

General Sales Office
15 Broad St., New York

Farmers' Bank Bldg.
Pittsburgh, Pa.

Fourdrinier Wires, all widths up to 300 inches

DIMOND WIRES

NEUMEYER & DIMOND
Established 1904
82-92 Beaver St. New York

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, April 24, 1929.

Conditions in the local paper market were fairly satisfactory during the past week. Demand for the various grades of paper is well up to average for the time of the year. Reports from salesmen of the leading paper organizations are mostly optimistic and the outlook for the future is promising. Prices are holding to schedule, in most instances.

The news print market is exhibiting a stronger undertone than of late following the recent agreement on production and prices. According to statistics prepared by the News Print Service Bureau production in the United States and Canada was maintained at 82 per cent of capacity during the past week while shipments averaged 82 per cent of rating.

The paper board market is still in an unsatisfactory position, due to price cutting. Both demand and production have fallen off slightly. Fine papers continue in excellent request and tissues are moving in fair volume. No radical changes were recorded in the coarse paper market and the movement of wrapping paper is well up to the average for the season.

Mechanical Pulp

Moderately active conditions prevailed in the ground wood market. Offerings of both domestic and imported grades continue rather limited and prices rule steady to firm. Inquiries for future business are fairly numerous. Shipments against contract are going forward in a normal manner for the time of the year.

Chemical Pulp

Demand for both imported and domestic chemical pulp is fairly persistent at present. Manufacturers of bleached and unbleached sulphite are well sold ahead and offerings are decidedly scarce. Prices are steady to firm. Imported bleached sulphate, however, is rather weak at present, and is now offered at from $3.60 to $3.85.

Old Rope and Bagging

The old rope market continues buoyant. Both domestic and imported manila rope is in excellent request and the recently advanced prices are generally being maintained. Mixed strings are moving in a routine manner. The bagging market rules fairly steady. Scrap bagging is in good demand while gunny scrap is moving in normal volume.

Rags

Considerable mill interest is developing in the domestic rag market. Cotton cuttings are in good request and roofing rags are moving into consumption at a steady pace. Prices are holding to schedule. The foreign rag market is showing some signs of improvement, but conditions abroad are unchanged.

Waste Paper

The paper stock market was moderately active during the past week. The lower grades were somewhat easier, influenced by the unsatisfactory position of the board market. Mixed paper is now offered at from .43 to .48, while strictly folded news is selling at from .55 to .60. The better grades of waste paper continue steady.

Twine

No radical changes were recorded in the twine market during the past week. While the various grades were only in moderate demand, the position of the industry is considered sound for the time of the year. There are a number of inquiries around for future business and dealers are mostly optimistic. Prices remain unchanged.

Brotherhood Arranges New Conferences

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., April 13, 1929.—Accompanied by J. P. Burke, head of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers who reside in Fort Edward, William R. Smith, president of the International Brotherhood of Papermakers, left during the week for Montreal for a conference with J. E. Patterson general manager of the Abitibi Power and Paper Company, as the first step towards a later general conference of Canadian mills preliminary to the signing of new wage and working agreements. From Montreal the two men will proceed to Thorold, Ont., and Tonawanda, N. Y., for similar conferences with manufacturers there. Plans are now being made in a tentative way for a wage conference with officials of the St. Regis Company at Watertown on April 15, the day following the Northern New York council meeting at Gouverneur. This coming conference with the St. Regis Company is one of the big ones scheduled for the month. Although the date has not yet been definitely fixed it is expected that in view of the fact that Floyd L. Carlisle, head of the company, is back from a Caribbean cruise it will soon be settled.

Unions will begin voting on Sunday April 21 on the twelve propositions embodied in the referendum and one of which calls for increasing the salary of Arthur Huggins, of Holyoke, Mass., international secretary of the Brotherhood, from $3,000 to $4,000 a year. Incidentally Mr. Huggins was successful this week in securing a tenant for the entire basement of the papermakers' building in Albany and as a result the union will be considerably enriched by the rental. Frank P. Barry, first vice president of the organization was sent during the week to Hudson Falls where he is busily engaged in attempting to iron out a number of grievances between the Union Bag and Paper Corporation and the Papermakers' Union.

Directory of Paper Makers

Marchant, Singer & Co., of 47 St. Mary Axe., London, England, have just published the 1929 edition of the "Directory of Paper Makers of Great Britain and Ireland." This well known directory has again been authentically revised and brought up to date, many changes having taken place since the preceding issue.

The directory contains a wealth of information regarding the paper industry in the British Isles, including an alphabetical list of all the mills, accompanied by maps showing their location; Classification of grades with manufacturers' names; Trade designations and actual watermarks; Standard names and sizes of papers and boards; Paper trade customs; Wholesale stationers, etc., etc.

E. W. Howell Resigns From Continental

E. W. Howell has resigned the post of vice-president and manager of sales of the Continental Paper Company, of Bogota, N. J.

WOOD PULPS

All Grades

CHICAGO OFFICE:
1132 Conway Building,
111 West Washington St.

Acer, McLernon & Company Limited

CANADA CEMENT BUILDING
MONTREAL, P. Q.

BROWN COMPANY'S ALPHA GRADES

of Purified Cellulose Fibre representing some of the valuable results of our many years of research in cellulose chemistry.

SUPER ALPHA

for strength in Tear, Fold and Mullen. Super Alpha equals the higher grades of rags in the manufacture of fine papers.

EASY-BEATING ALPHA

This is a grade developed for mills of limited beating capacity. While not giving results equal to Super Alpha, it produces wonderful paper on short beating.

REGULAR ALPHA

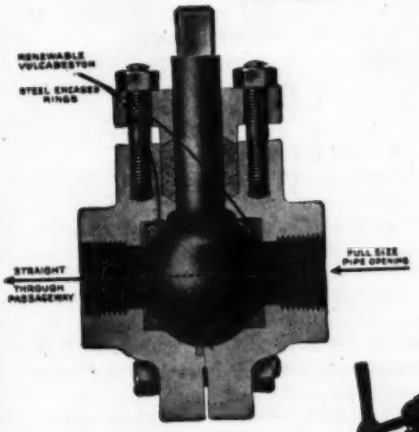
This is a grade midway between Super and Easy-Beating.

Use ALPHA for Quality

BROWN Company — FOUNDED 1852 — Portland, Maine

FAIRBANKS' "SPHERO"

The Perfect "Blow-Off" Valve
PATENTED



Especially adapted to the requirements of the paper manufacturing industry. The 6 inch and 8 inch sizes, with flanged ends are used extensively as blow-offs on digesters.

Write for Special Bulletin

THE FAIRBANKS COMPANY
BOSTON NEW YORK PITTSBURGH
Factory: Binghamton, N. Y.
Distribution in ALL Principal Cities

THE CLARK-AIKEN CO.

Successors to
H. C. Clark & Son Machine Co.

PAPER MILL MACHINERY
LEE, MASS.

Revolving Paper Cutters—Rag Cutters—Cylinder Paper Machines—Washing and Beating Engines—Chilled Iron and Paper Calenders—Fan and Stuff Pumps—Engine Roll Bars and Bed Plates—
Cylinder Molds—Marshall Drives—Slitters and Rewinders—Reels—Dryers with Improved Packing Boxes—Wet Machines—Gun Metal and Rubber Rolls—Rolls Reground.

The Extensive Range of the *Tycos* Line will enable you to select the Instruments that will meet adequately all your Temperature requirements
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AR

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, April 24, 1929.

BLANC FIXE.—Steadiness prevails in the blanc fixe market. Both the pulp and the powder are in normal request. Prices are holding to schedule. The pulp is quoted at from $42.50 to $45.00 per ton, while the powder is selling at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—The bleaching powder market is in a sound position. Supplies are moving into consumption in good volume. Prices are holding to previously quoted levels without difficulty. Bleaching powder is selling at from $2.00 to $2.35 per 100 pounds, in large drums, at works.

CASEIN.—No radical changes were recorded in the casein market. Domestic casein is still selling at from 16 cents to 16¼ cents per pound, while standard ground imported is selling at 16 cents per pound and finely ground at 16¼ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—The caustic soda market is exhibiting a strong undertone. Prices rule steady and there is little talk of concessions around. Solid caustic soda is quoted at from $2.90 to $2.95, while the flake and ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—Demand for china clay was fairly active during the week. The contract movement was well up to average. Prices remain unchanged. Imported china clay is quoted at from $15 to $25 per ton, ship side, while domestic paper making clay is selling at from $8 to $13 per ton, at mine.

CHLORINE.—Conditions in the chlorine market are satisfactory. Shipments against contract are going forward regularly. Chlorine is quoted at 3 cents per pound, in tanks, or multi-unit cars, at works, on standard contracts. The spot quotation ranges from 3¼ cents to 3½ cents per pound.

ROSIN.—Some improvement was noticed in the rosin market. At the naval stores, the grades of gum rosin used in the paper mills are quoted at from $8.25 to $8.55 per 280 pounds, in barrels, ex dock. Wood rosin is still selling at from $6.60 to $7.40 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—The salt cake market continues active. Demand for this product is persistent but offerings are decidedly limited and prices are steady to firm. Salt cake is still quoted at from $16 to $18 per ton, while chrome salt cake is selling at from $14 to $15 per ton, in bulk, at works.

SODA ASH.—Contract shipments of soda ash are still moving in heavy volume. Inquiries for future business are numerous and the trend of the market is strong. Prices are unchanged. Contract quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bags, $1.32½; and in barrels, $1.55.

STARCH.—Most of the business transacted in the starch market during the past week was along routine lines. The contract movement was normal for the season. Prices remain unchanged. Special paper making starch is quoted at $3.82 per 100 pounds, in bags, and at $3.99 per 100 pounds, in bags, at works.

SULPHATE OF ALUMINA.—While production of sulphate of alumina is being maintained in good volume the output is being freely absorbed. Prices remain unchanged. Commercial grades of sulphate of alumina are quoted at from $1.40 to $1.55 and iron free at from $1.95 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—The sulphur market is practically unchanged. Demand for this product continues active. Sulphur is quoted at $18 per ton, in lots of 1,000 tons or over, on yearly contracts, and at $20 per ton for any smaller quantity over that period. On spot and nearby car loads, the quotation is $21 per ton.

TALC.—Offerings of talc are about sufficient to take care of current requirements. Prices are generally holding to schedule and shading is infrequent. Domestic talc is quoted at from $16 to $18 per ton, at eastern mines, while imported talc is selling at from $18 to $20 per ton, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
Book, Cased—		
S. & S. C.	6.00	@ 7.50
M. F.	5.75	@ 7.00
Coated and Enamel	7.50	@12.00
Lithograph	7.50	@12.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.35	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .80
Kraft	1.00	@ 1.10
Manila	.75	@ .80
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	5.25	@ 5.50
Southern	4.25	@ 4.50
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

News, per ton—		
Rolls, contract	62.00	@ —
Rolls, spot	62.00	@ —
Sheets	67.00	@ —
Side Runs	47.00	@52.00
Boards—per ton—		
News	32.50	@37.50
Straw	52.50	@55.00
Chip	30.00	@35.00
Binders' Boards	65.00	@70.00
Sgl. Mla. Ll. Chip	42.50	@45.00
Wood Pulp	80.00	@85.00
65 Test Jute Liner	52.50	@ —
85 Test Jute Liner	55.00	@ —

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	28.00	@31.25
Dry	32.00	@34.00
(F. o. b. Mill)		
No. 1 Demestic	26.00	@29.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.75	@ 4.40
Easy Bleaching	2.90	@ 3.10
No. 1 strong unbleached	2.60	@ 2.80
Mitscherlich unbleached	2.60	@ 3.25
No. 2 strong unbleached	2.40	@ 2.50
No. 1 Kraft	2.40	@ 2.75
No. 2 Kraft	2.35	@ 2.50
Sulphate—		
Bleached	3.60	@ 3.85
(F. o. b. Pulp Mill)		
Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	2.60	@ 2.75
News Sulphite	2.40	@ 2.50
Mitscherlich	3.00	@ 3.25
Kraft (Domestic)	2.50	@ 3.30
Soda Bleached	3.25	@ 3.40
Sulphate Screenings—		
Coarse	.75	@ .95
Refined	1.65	@ 1.85

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	11.00	@11.50
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.50	@ 8.00
New Unbleached	11.00	@11.50
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Strictly Folded	.58	@ .63
No. 1 Mixed Paper	.45	@ .50
Washables	4.75	@ 5.25
Fancy	5.75	@ 6.25
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.15	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.50	@ 6.00
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.50	@ 2.75
St. Soiled, White	2.00	@ 2.15
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.55	@ 1.65
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.90	@ 1.05

Foreign Rags

New Rags

New Dark Cuttings	2.50	@ 3.00
New Mixed Cuttings	2.75	@ 3.25
New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.50	@ 8.00
Unbleached Cuttings	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50

Old Rags

No. 1 White Linens	7.50	@ 8.25
No. 2 White Linens	5.75	@ 6.75
No. 3 White Linens	4.75	@ 5.25
No. 4 White Linens	3.00	@ 3.50
No. 1 White Cotton	5.50	@ 6.50
No. 2 White Cotton	4.50	@ 5.50
No. 3 White Cotton	3.00	@ 4.00
No. 4 White Cotton	1.90	@ 2.15
Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med Light Prints	1.90	@ 2.10
Dutch Blue Cottons	2.20	@ 2.40
French Blue Linens	2.75	@ 2.85
German Blue Linens	2.35	@ 2.55
German Blue Cottons	2.15	@ 2.25
Checks and Blues	1.85	@ 2.00
Lindsay Garments	1.90	@ 2.00
Dark Cottons	1.60	@ 1.65
Old Shopperies	1.55	@ 1.60
New Shopperies	1.50	@ 1.60
French Blues	2.10	@ 2.25

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.65	@ 1.75
Domestic	1.70	@ 1.75
Wool Tares, light	1.60	@ 1.65
Wool Tares, Heavy	1.65	@ 1.75
Bright Bagging	1.65	@ 1.70
Small Mixed Rope	1.25	@ 1.40
Manila Rope—		
Foreign	4.40	@ 4.65
Domestic	4.75	@ 5.00
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, white, No. 1	3.25	@ 3.50
Hard, white, No. 2	2.40	@ 2.55
Soft, White, No. 1	2.50	@ 2.60
White envelope cuttings	3.25	@ 3.50
Flat Stock—		
Stitchless	1.60	@ 1.70
Overissue Mag	1.60	@ 1.70
Solid Flat Book	1.50	@ 1.60
Crumpled No. 1	1.10	@ 1.20
Solid Book Ledger	2.00	@ 2.10
Ledger Stock	1.70	@ 1.80
New B. B. Chips	.65	@ .75
New Env. Cut	2.40	@ 2.60
Manilas—		
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.75	@ .80
Container	.58	@ .63
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	1.70	@ 1.80
News—		
No. 1 White News	1.65	@ 1.75
Blue Overall	7.50	@ 8.00
Strictly Overissue	.75	@ .80
Strictly Folded	.55	@ .60
No. 1 Mixed Paper	.43	@ .48
Common Paper	.30	@ .35

SKANEATELES FALLS, N.Y.

NEW YORK STATE

The Place Where GOOD FELTS Come From

Felts for all grades of paper.
They meet all conditions and suit all requirements.
Have you tried them?

THE WATERBURY FELT CO.

SKANEATELES FALLS, N.Y.

This is the *Plate*

on which 90% of the Jobbers are building their business.

Bakers prefer it, because it is moulded from pulp in exactly the same shape as a tin plate, absorbent and keeps their pies in perfect shape.

Write us for prices.

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PIE PLATES

KEYES FIBRE COMPANY, Inc.
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CLAY

EDGAR

ABSOLUTE UNIFORMITY

American Made for American Trade

Two Leading American Clays

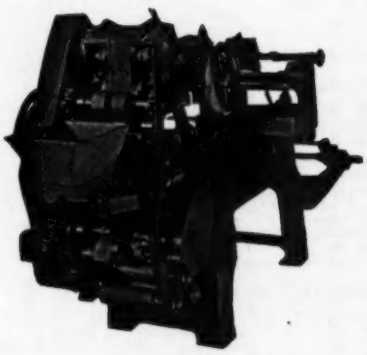
H. T. BRAND
For Coating and Filling
Used extensively by Leading Paper Mills

KLONDYKE BRAND
Filler Clay

Edgar Clays are the result of almost half century of experience in washing clay. Technical service available for both coating and loading without charge.

Ask for Samples

EDGAR BROS. Co.
50 CHURCH ST. NEW YORK



HIGHEST SPEED
Paper Bag Machinery

Get My Quotations Before Placing Your Orders
Special Machinery Designed and Built

A. L. PARRISH
1702 Robinson St., South Bend, Ind.

Twines
(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.19	@	.21
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.16	@	.17
Fine Tube Yarn—			
5-ply and larger	.21	@	.25
4-ply	.25	@	.29
3-ply	.28	@	.32
Unfinished India—			
Basis	.13	@	.14
Paper Makers Twine			
Balls	.11	@	.12
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.17	@	.19
Amer. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis	.14	@	.16
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Rope	.22	@	.24

CHICAGO

Paper
(F. o. b. Mill)

All Rag Bond	.35	@	.41
No. 1 Rag Bond	.25	@	.34
No. 2 Rag Bond	.14	@	.25
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¾	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¼	@	.06½
Southern Kraft	.03¾	@	.04
No. 2 Kraft	.04	@	.04¼
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¾
White Tissue—			
20x30 Sheet	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	62.00	@	—
Sheets	67.00	@	—
Boards, per ton—			
Plain Chip	37.50	@	41.00
Solid News	47.50	@	—
Solid News	47.50	@	—
Manila Lined Chip	55.00	@	—
Container Lined—			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.20	@	2.25
White Env. Cuttings	2.40	@	2.50
No. 1 Soft Shavings	2.00	@	2.10
No. 1 Mixed	.90	@	1.00
No. 2 Mixed	.70	@	.75
Ledger & Writings	1.45	@	1.50
Solid Books	1.25	@	1.40
Blanks	1.40	@	1.50
Krafts	1.60	@	1.75
New Kraft Cuts	2.15	@	2.25
Manila Envelope Cuttings	1.65	@	1.75
Ex. No. 1 Manila	1.30	@	1.45
Print Manila	.80	@	.85
Folded News (over-issue)	.80	@	.85
Old Newspapers—			
No. 1	.70	@	.80
No. 2	.65	@	.70
Mixed Papers—			
No. 1	.65	@	.70
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.06	@	.40
Ledgers	.09	@	.40
Writings—			
Superfine	.12½	@	.18
Extra fine	.18	@	.22
Fine	.17	@	.26
Fine, No. 2	.15	@	.25
Fine, No. 3	.10	@	.20
Book, M. F.	.05½	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.09½	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.08	@	.09
Manila Sul., No. 1	.04	@	.05½
Manila No. 2	.03	@	.04
No. 2 Kraft	.06	@	.06½
No. 1 Kraft	.06½	@	.07
Common Bogus	.03½	@	.04
(Delivered Philadelphia)			
News Print Rolls	62.00	@	—
Straw Board	52.50	@	75.00
News Board	38.00	@	42.00
Chip Board	35.00	@	40.00
Wood Pulp Board	85.00	@	95.00
Binder Boards—			
No. 1, per ton	75.00		
No. 2, per ton	70.00		
Carload lots	68.00	@	70.00
Tarred Felts—			
Regular	53.00	@	55.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.44	@	1.54
Best Tarred, 3-ply	1.83	@	2.08

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.10½	@	.11
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.08½	@	.09
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable, No. 1	.04½	@	.05
Blue Overall	.07½	@	.08
Cottons—According to grades—			
Washable, No. 2	.03	@	—
New Blue	.03	@	.03½
Fancy			
New Black Soft	.05	@	.05¾
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03¾	@	.04½

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.20	@	3.25
No. 2 Hard White	2.75	@	3.00
No. 1 Soft White	2.50	@	2.60
No. 2 Soft White	1.90	@	2.00
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.85	@	1.90
Writing Paper	1.60	@	1.65
No. 1 Books, heavy	1.45	@	1.55
No. 2 Books, light	1.20	@	1.25
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.95	@	1.00
Container Manila	.85	@	.90
Old Kraft	2.25	@	2.50
Common paper	.50	@	.55
No. 1 Mixed Paper	.65	@	.70
Straw Board, Chip	.65	@	.70
Binders Board, Chip	.65	@	.70
Overissue News	.85	@	.90
Old Newspaper	.65	@	.70

Domestic Rags (Old)

White, No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
White, No. 2—			
Repacked	.02½	@	.03¼
No. 2	1.30	@	1.35
No. 3 (Roofing)	1.15	@	1.25
No. 4	1.00	@	1.15
No. 5A	.75	@	.85
B	.65	@	.75
C	.65	@	.75
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.65	@	1.75

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	—	@	.06½
No. 2 Kraft	.05¼	@	.06
Common Bogus	.02	@	.02¾
Delivered New England points			
News Print Rolls	61.50	@	—
Straw Boards, rolls	.009		52.50
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board	37.50	@	40.00
Chip Board	35.00	@	37.50
Single Manila Lined Chip	47.50	@	50.00
Single White, Patent Coated Newsboard			
Bender	67.50	@	80.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.50	@	2.60
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.35	@	2.45
No. 1 Books, Heavy	1.50	@	1.55
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	1.15	@	1.20
White Blank News	1.60	@	1.65
Old Kraft	—	@	1.80
Print Manila	.80	@	.90
No. 1 Mixed Paper	.50	@	.52½
Overissue News	.65	@	.80
Old Newspapers	—	@	.55
Box Board, Chip	.55	@	.60

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	—	@	1.60
Manila Rope—			
Foreign	4.50	@	4.75
Domestic	4.75	@	—
Mixed Strings	.90	@	1.00
Jute Wool Strings	—	@	1.00
Scrap Burlaps	1.25	@	1.35
Scrap Sisal	1.60	@	1.80
Scrap Sisal for shredding	1.75	@	2.00
Wool Tares, heavy	—	@	1.37½
New Burlap Cutting	1.90	@	2.00
Australian Wool Pouches	2.75	@	3.00

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.09½	@	.10
Silesias, No. 1	.06	@	.06¼
New Unbleached	.10	@	.10¼
Fancy	.04	@	.04½
Washable	.04	@	.04¾
Cottons—According to grades			
Blue Overalls	.06¼	@	.06¾
New Black, soft	.04	@	.04½
Khaki Cuttings	.04	@	.04¾
O. D. Khaki	.05	@	—
Corduroy	.03	@	.03½
New Canvas	.08	@	.08½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	2.75	@	3.00
Thirds and Blues—			
Repacked	2.50	@	—
Miscellaneous	1.75	@	1.90
Roofing Stock—			
No. 1	1.65	@	1.75
No. 2	1.45	@	1.55
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15

Foreign Rags
(F. o. b. Boston)

Dark Cottons	1.60	@	1.65
New No. 1 Shirt Cuttings	9.00	@	10.00
Dutch Blues	2.00	@	2.13¾
Lace Curtains	5.10	@	5.50
New Checks & Blues	4.25	@	4.50
Old Fustians	1.90	@	—
Old Linsey Garments	1.85	@	1.90

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¾	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 3 Coated and Litho	11.50	@	—
Coated tinted	14.50	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.00	@	—

(Delivered Toronto)

News, per ton—			
Rolls (contract)	61.50	@	62.00
Sheets	67.00	@	—

Pulp
(F. o. b. Mill)

Ground Wood	30.00	@	31.00
Sulphite easy bleaching	62.00	@	—
Sulphite news grade	62.00	@	—
Sulphite, bleached	75.00	@	—
Sulphate	60.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.80	@	—
No. 1 Mixed Paper	.70	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.11½	@	—
Fancy Shirt Cuttings	.05¼	@	—

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JAMES L. CAREY
Paper Mill Architect and Engineer
208 North Laramie Avenue, Chicago
JASCAR, Chicago
Cable Address:
Western Union
Codes: ABC 5th

Paper Mill Stocks and Bonds

Quoted by Taylor & White, 45 Wall street, New York City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	ASKED
Abitibi Power & Paper 5s, 1943	90	91
Abitibi Power & Paper 6s, serially to 1934	100	102
American Writing Paper 6s, 1947	81	87
Bastrop Pulp & Paper 6½s, 1940	103	105½
Bedford Pulp & Paper 6½s, 1942	97	100
Beigo-Canadian Paper 6s, 1943	100	103
British-Columbia Pulp & Paper 6s, 1950	89	9-
Brown Paper Mills Serial 6s, 1941	97	100
Brown Company 5½s, 1946	98	101
Bryant Paper 6s, 1942	98	101½
Canadian Paper Board 7s, 19337	97	99½
Cape Breton Pulp & Paper 6s, 1932	103	...
Celotex Company 6s, 1929	95	99
Celotex Company 6½s, 1939	100	102
Celotex Company of Chicago, Debenture 6s, 1936	95	98
Central Paper Company Serial 6½s, 1942	86	89
Central Paper 7s, 1934	78	...
Champion Coated Paper Serial 6½s, 1934	100	...
Champion Coated Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 8s, 1930	95	...
Champion Paper Corp. 6s, 1945	95	98
Container Corp. of America Debenture 6s, 1936, ex-warrants	101	104
Continental Paper Products 6½s, 1943	90	99
Cornell Wood Products 7½s, 1937	103	...
Crown Willamette 6s, 1951	101	102
Dells Paper & Pulp Serial 6s, 1938	95	98
Dixon Board Mills Serial 6s, 1942	80	...
Donnaconna Paper 5½s, 1948	93	...
Eastern Manufacturing Co. 7s, 1938	97	100
Escanaba Paper Serial 6s, 1939	98	100
Escanaba Paper 6½s, 1935	96	99
Filer Fibre Serial 7s, 1935	90	95
Fort Irange Paper 7s, 1942	101	...
Fort William Paper 6s, 1946	100	104
Fraser Company 6s, 1950	103	105
Hammermill Paper Serial 6s, 1939	100	...
Hawley Pulp & Lumber 6s, 1946	96	...
Hawthorne Paper Company 6s, 1937	80	...
Hoberg Paper & Fibre 7s, 1937	94	97
Industrial Fibre Corp. Debenture 8s, 1933	100	...
Itasca Paper & Prairie River Power Serial 5½s, 1938	99½	...
Itasca Paper & Prairie River Power Serial 6s, 1938	99	...
Jessup & Moore First 6s, 1945	83	90
Kalamazoo Vegetable Parchment 6s, 1938	99	101
Lake Superior Paper 6s, 1941	105	108
Marathon Paper Mills Serial 5½s, 1942	99	101
Marinette & Menominee 7½s, 1936	103	105
Mead Pulp & Paper 5% Notes Serially, 1937	95	100
Mead Fibre 7s, 1937	97	101
Minnesota Ontario Paper Serial 6s, 1945	97½	100
Murray Bay Paper Serial 6½s, 1947	102	105
Munissing Paper Serial 6s, 1936	98	...
Nekoosa Edwards Paper 6s, 1928-42	96	...
Ontario Pulp & Paper 6s, 1931	108½	110½
Orono Pulp & Paper 6s, 1943	99	...
Orono Pulp & Paper 5s, 1941	96½	...
Oswego Falls Corp. 6s, 1941	99	102
Parker-Young Company 6½s, 1944	98	100
Paterson Parchment Paper 6s, 1938	101	103
Penobscot Chemical Fibre 6s, 1942	102	105
Port Alfred Pulp & Paper 5½s, 1947	98	100
Price Brothers 6s, 1943	105	...
Provincial Paper 5½s, 1947	98½	...
Queen City Paper 7s, 1933	98	...
River Raisin Paper 6s, 1936	98	100
Riordan Pulp & Paper 6s, 1942	102	104
Rolland Paper 6s, 1937	99	101
St. Croix Paper Serial 5s, 1937	99	...
St. Helen Pulp & Paper 6½s, 1931	99	102
St. Maurice Valley Corp. 6s, 1945	101	104
St. Maurice Valley Corp. 5½s, 1947	98½	100½
St. Regis Paper of Canada 6s, 1931	100	101½
St. Regis Paper of Canada 6½s, 1934	100	102
Smith (Howard) Paper Mills 7s, 1941	104	104
Spanish River Pulp & Paper 6s, 1931	108	110
Stevens-Thompson Paper 6s, 1942	94	9-
Taggart Brothers 6s, 1944	95	100
Tait Paper & Color Industries 6s, 1934	88	92
Ticonderoga Pulp & Paper 5s, 1930	94	...
Ticonderoga Pulp & Paper 6s, 1940	100	102
Tomahawk Kraft Paper 6s, 1938	98	...
Tomahawk Pulp Paper 7s, 1932	99	...
Tonawanda Paper 5½s, Series 1941	99	102
Union Bag & Paper Power 6s, 1932	98	100
United Wall Paper Factories 6s, 1947	96	99
Warren (S. D.) Company 6s, 1945	103	105
Watab Paper 6½s, 1942	102	...
Waterway Paper Products 6s, 1931	100	101½
Wayagamack Pulp & Paper 6s, 1951	103	105
Westfield River Paper Serial 7s, 1943	89	93
Whitmer-Parson Pulp & Lumber 8s, 1938	20	25
Whitaker Paper 7s, 1942	108	110

STOCKS	BID	ASKED
American Box Board, Pfd.	9½	10½
American Box Board, Com.	9¼	10¼
Am. Tissue Mills, 7% Pfd.	90	93
British Columbia P. & P. Pfd.	75	80
Brompton Pulp & Paper, 8% Pfd.	100	...
Champion Fibre, 7% Ffd.	108	110
Diem & Wing, 7% Pfd.	92	97
Eastern Mfg. Co. 1st Pfd.	55	...
Great Northern Paper, Com.	75	78
Hammermill Paper, new 6% Pfd.	100	...
Hinde & Dauch, Com.	125	None Off
Hinde & Dauch, 6% Pfd.	102	None Off
Holyoke Card & Paper	160	None Off
Marathon Paper Mills, Com.	186	...
Mengel Co., Pfd.	102	104
Midwest Box Co., 8% Pfd.	98	102
Midwest Box Co., 6% Pfd.	95	99
Louis De Jonge Co., 7% Pfd.	94	97
Oxford Papers Com.	195	...
Oxford Paper Co., Pfd.	108	111
Penobscot Chemical Fibre, Com.	80	...
Richardson Co., Com.	170	...
Sabin Robbins Paper Co., 8% Pfd.	105	110
St. Croix Paper	155	...
St. Regis Paper Co., 7% Cum. Prd.	105	108
Westfield River Paper Co., 1st Pfd.	Wanted	None off.
West Virginia Pulp and Paper Company	55	57
West Virginia Pulp and Paper, Pfd.	100	107
Whitaker Paper, 7% Cum. Pfd.	105	None Off.

ST. LAWRENCE POWER DEVELOPMENT

(*Continued from page 31*)

more than doubled its fabric plant during the year and further increase was in hand. Results were satisfactory and complete success was anticipated.

The year under review was one during which the company's plant at Drummondville was being completed and a market found for the various fabrics manufactured. On this account earnings were of small proportions, but the statement of assets and liabilities shows the company in a strong financial position and favorably situated to take care of its further progress and development.

Current assets amount to $3,916,286, as against current liabilities of $102,671. Net profits from operations were $13,257, and the total sum carried to deferred credits account for the year was $180,409, bringing the total of this account to $512,119. Total assets are now reported at $10,935,865. The principal items in the balance sheet include cash on hand and call loans $546,211, bonds and stocks $2,422,536, inventories $863,042, fixed assets $6,988,265.

St. Lawrence Earned Dividend

The annual report of St. Lawrence Paper Mills for 1928 shows that the company earned its preferred dividends by a comfortable margin.

The condensed balance sheet for the period year ended December 31, 1928 reveals a working capital position of $4,829,268.

Current assets include investments and loans of $4,348,589, and accounts and bills receivable at $694,302. Inventories are valued at $2,220,126.

Liabilities include accounts payable of $175,152; bank loans are shown at $2,044,847. Fixed assets, including timber lands, mills, etc., and new construction and additions since May, 1928, total $23,727,591.

Installation of two additional news print machines with necessary new buildings and auxiliary equipment has been completed. The mill now operates six machines.

In his remarks to shareholders, Ernest Rossiter, president of the company, stated that at the present percentage of operation and at the selling price of $55 a ton, earnings of the company for the current year are expected to cover the preferred dividends.

Roofing Paper Extensions

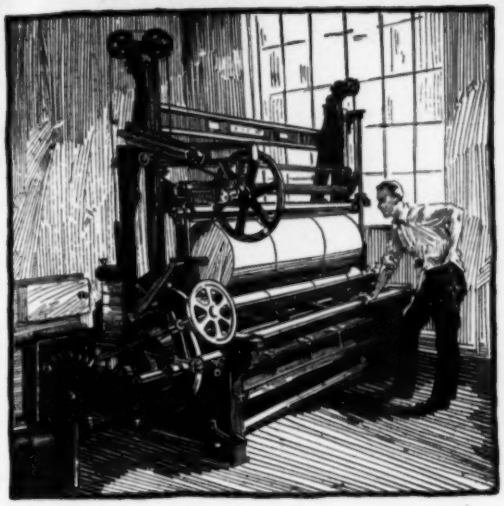
The Sydney Roofing and Paper Company is planning extensions to its plant at Victoria, B. C. Contracts for the work are to be placed almost immediately.

Test Book Paper Made in 1897

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 24, 1929.—A paper manufacturer has recently submitted to the paper laboratory of the Bureau of Standards a sample of book paper which was made in 1897, for advice as to the probable permanence of their current product which is made exactly the same. The paper was composed of 15 per cent rag fiber and 85 per cent soda pulp and was filled with clay. It was tested for alpha-cellulose, copper number, acidity and strength.

Officials of the laboratory state that the paper was compared to a similar paper of the same fiber composition and weight recently made by the same company. There was very little difference between the two. Inasmuch as the two papers were made alike and the tests gave similar results, it may be assumed that the paper has changed little in the thirty years it has been stored, and that, therefore, an equal life may be expected of the paper now being made, if stored under the same conditions.



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ESTABLISHED 1872

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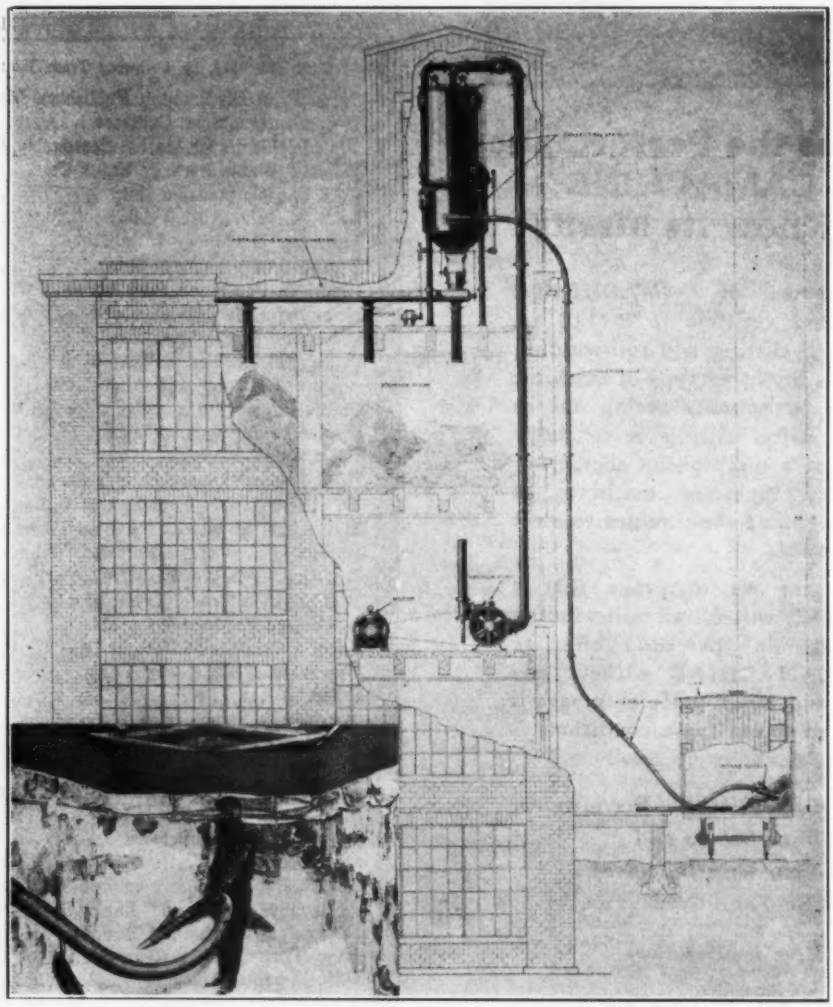

Fig. 1. Man unloading 10 tons of clay per hour with 3" hose.

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